



Whisper**Power**Book

green energy solutions • **Catalogue 2014-2015**



WhisperPower World Class Systems

Free at last! After months of planning and preparation, the cruising season is finally underway. Intensive inland, coastal or bluewater sailing will be starting soon once those last finishing touches have been carried out on board. Your WhisperPower system is ready to provide you with all the power you need, whenever you need it for your optimal comfort and safety. Rigorously tested, ultra- reliable and user friendly WhisperPower systems give you the ultimate freedom.

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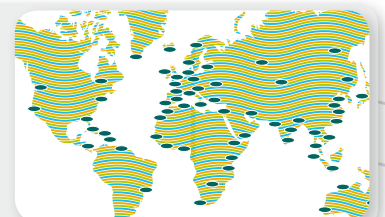
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Welcome on-board with WhisperPower

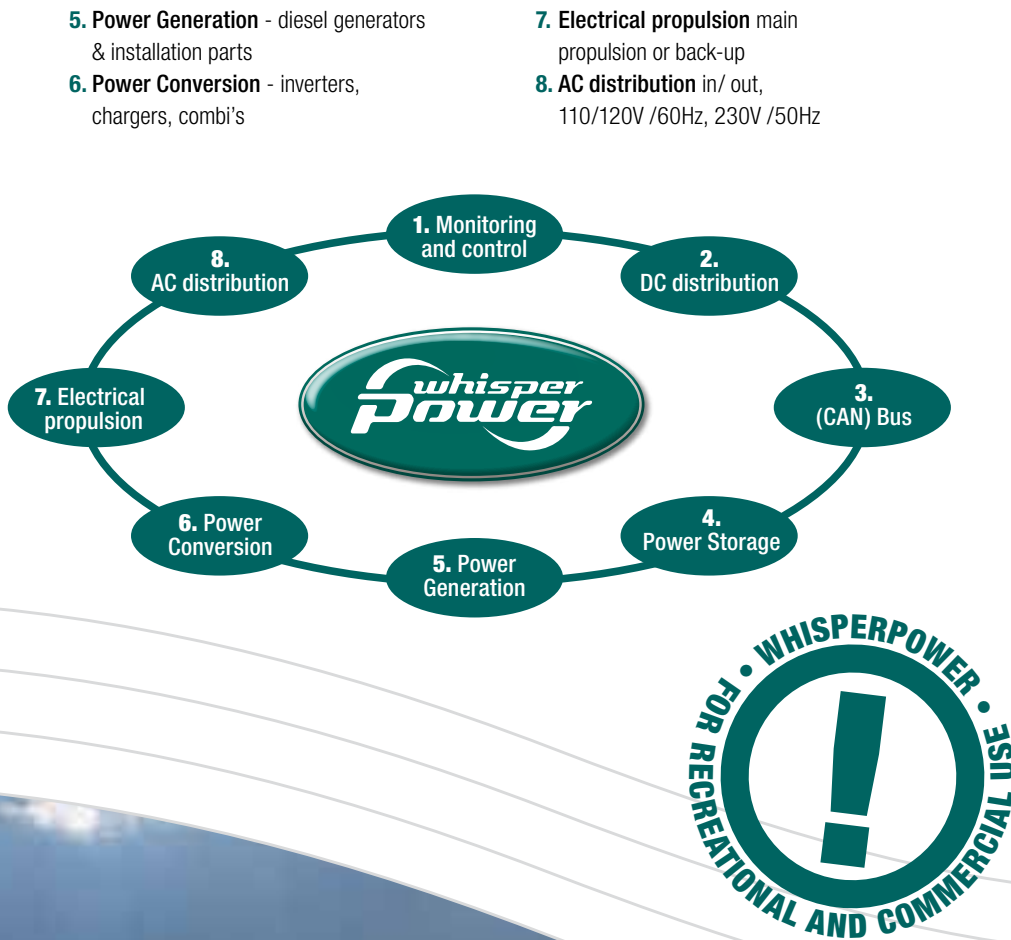
WhisperPower is offering world class systems, products, components and parts for recreational and professional use! You will start reading about our systems first; in this catalogue we offer complete power systems solutions based on an extended range of products and components. We help you to select the right parts within seconds, exactly what you need for your specific application.

Take advantage of the one-stop-shop:

- Enjoy the highest COMFORT level
- Be assured you installed the most RELIABLE electrical system
- Guaranteed the longest LIFE TIME
- Benefit from a quick and COST EFFECTIVE installation
- For the best GLOBAL SERVICE
- Offering the BEST VALUE

The 'bullit proof' power system

- 1. Monitoring and control** - dashboard or remote, at distance
- 2. DC distribution**, 12, 24 or 48VDC
- 3. Compatibility to other (CAN) Bus** systems including NMEA 2000
- 4. Power Storage** - long life batteries & around the battery



5. Power Generation - diesel generators & installation parts

6. Power Conversion - inverters, chargers, combi's

7. Electrical propulsion main propulsion or back-up

8. AC distribution in/ out, 110/120V /60Hz, 230V /50Hz

Example

30 -40 Ft System Comfort guide

| Consumers | 12V users | 230V users (120 V/60Hz for USA) |
|---------------------|-----------|------------------------------------|
| GPS & chart plotter | ● | |
| Automatic pilot | ● | |
| Depth gauge | ● | |
| VHF – telephone | ● | |
| Radar | ● | |
| Navigation lights | ● | |
| Reading lights | ● | |
| Refrigerator | ● | |
| Deepfreeze | ● | |
| Service battery | ● | |
| Starter battery | ● | |
| Thruster battery | ● | |
| telephone charger | | ● |
| I pod charger | | ● |
| Laptop | | ● |
| Tablets | | ● |
| Coffee machine | | ● |
| Watercooker | | ● |
| Microwave | | ● |
| Hairdryer | | ● |
| TV flatscreen | | ● |
| Airco 16,000 btu | | ● |
| Washing machine | | ○ |
| Battery charger | | ○ |
| Inverter Combi | | ● |

Suggestion: System Advanced (generator Optional)

Explanation of symbols

- = Not in use
- = On board and used 12V
- = On board and used 24V
- = On board and used 230V 50Hz operating on inverter or shore (or on Whisper Generator, when installed)

Comfort Guide explained

Our 'Bullit Proof' system approach provides you with a system that precisely meets your power requirements. We help you to select the right system by the showing of a COMFORT GUIDE, where you can check your power needs.

Comfort Guide

For example - see left: 30 - 40 Ft yacht
Outcome: System Basic/ 12 Volt will be a good solution - see page 8-9 for a description

Other benefits

- 2 years warranty as standard
- 5 years systems warranty optional
- Global systems advice and product support
- World wide on board service*)

*) Ask for our comprehensive Terms and Conditions of Sale

World Class Systems

Boats from 20-30 Ft



Photograph: Courtesy of Osprey, Wajer & Wajer, the Netherlands

Basic system

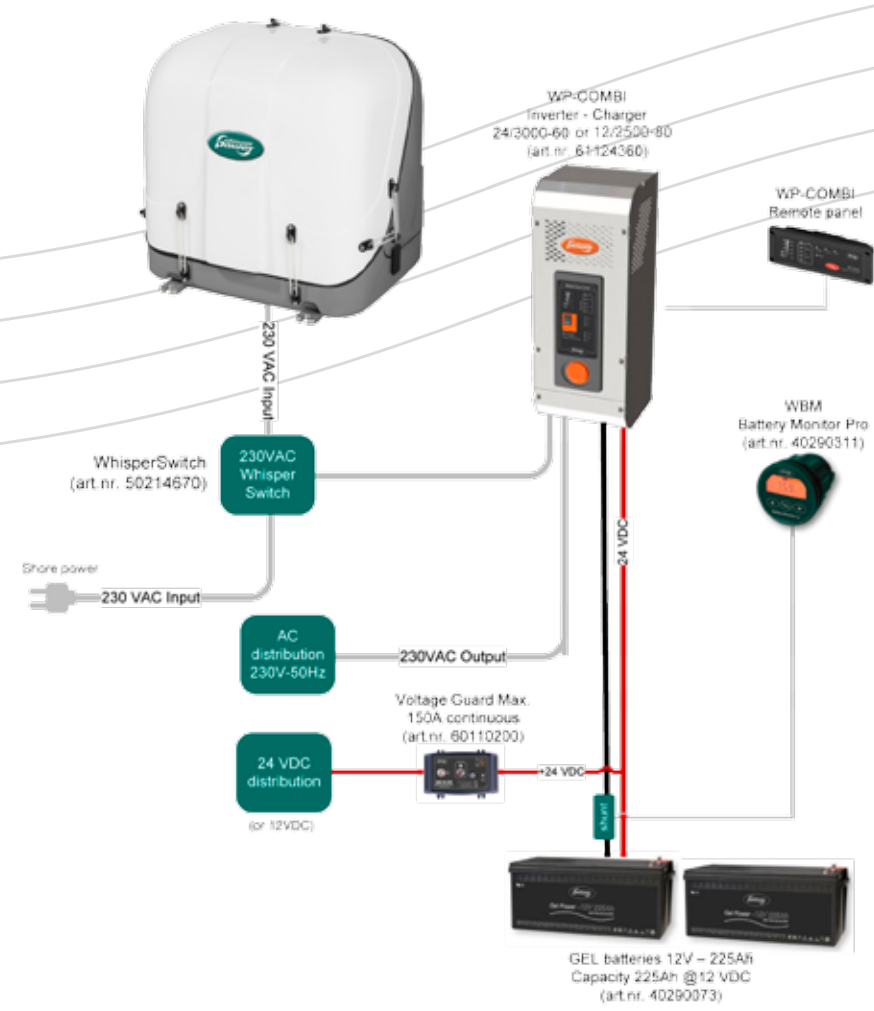
for small craft

Our Basic system can be installed in any sailing or motor yacht between 20 and 30 Ft (6 - 10 mtrs). The system is providing plenty of energy for the various 12 V DC users and 230 V (or 120 V) appliances. Even a small airconditioning (10.000 - 16.000 BTU) can be operated by the sine wave inverter/ battery charger or directly connected to shore power. The Basic system can be upgraded to Advanced level by adding a WhisperPower diesel generator.

System **Basic** overview



System **Basic** (generator Optional)



20 - 30 Ft System

Comfort guide

| Consumers | 12V users | 230V users (120 V/60Hz for USA) |
|---------------------|-----------|------------------------------------|
| GPS & chart plotter | ● | |
| Automatic pilot | ● | |
| Depth gauge | ○ | |
| VHF – telephone | ● | |
| Radar | ○ | |
| Navigation lights | ● | |
| Reading lights | ● | |
| Refrigerator | ● | |
| Service battery | ● | |
| Starter battery | ● | |
| Thruster battery | ● | |
| telephone charger | | ● |
| I pod charger | | ● |
| Laptop | | ○ |
| Tablets | | ○ |
| Coffee machine | | ● |
| Watercooker | | ● |
| Microwave | | ○ |
| Hairdryer | | ○ |
| TV flatscreen | | ○ |
| Battery charger | | ● |

Suggestion: System Basic/ 12 Volt will be a good solution - See page 5/6 for a description

- Explanation of symbols**
- = Not in use
 - = On board and used 12V
 - = On board and used 24V
 - = On board and used 230V 50Hz operating on inverter or shore
 - = On board and used 230V 50Hz operating on WhisperPower generator or Inverter
 - = On board and used 230V 50Hz WhisperPower generator only or shorepower



World Class Systems Boats from 30-40 Ft

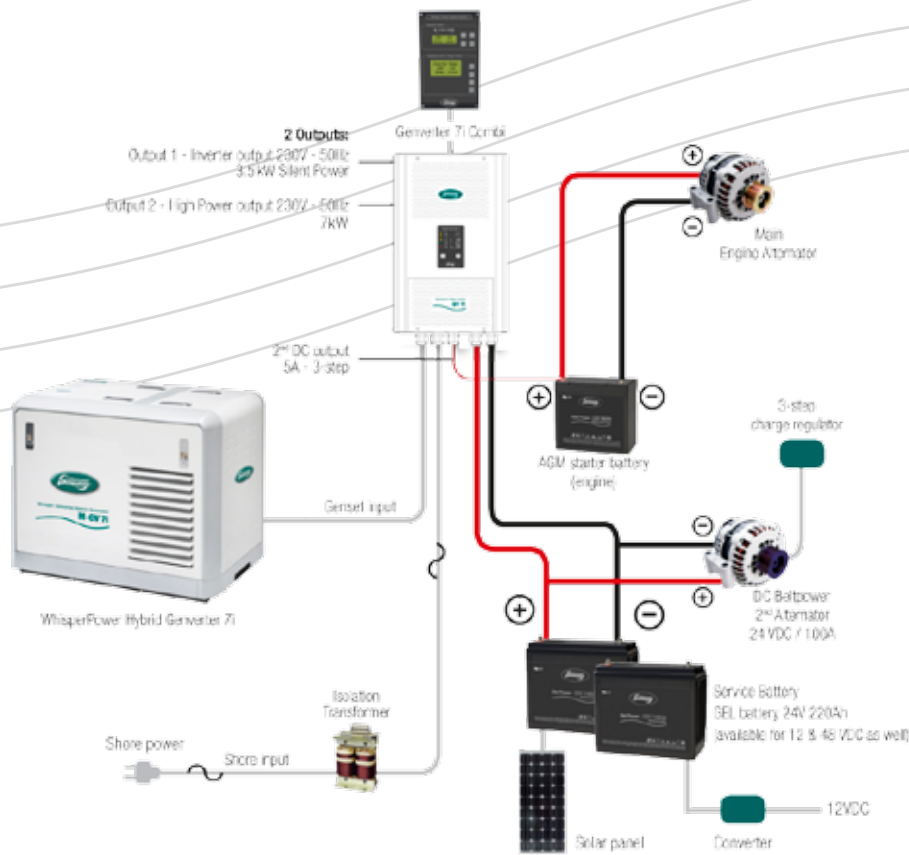
Independency offered by System Advanced

Craft in the 10 – 13 metre range come in many different styles, ranging from a day cruiser to a fully equipped world cruiser. WhisperPower is ensuring total freedom by supplying a full kit of power devices, including a silent diesel generator. Solar modules can be added to charge the batteries during the day, the high output DC Beltpower, fitted to the main engine, will re-charge all batteries simultaneously within a short time.

System Advanced



System Advanced



30 -40 Ft System Comfort guide

| Consumers | 12V users | 230V users (120 V/60Hz for USA) |
|---------------------|-----------|------------------------------------|
| GPS & chart plotter | ● | |
| Automatic pilot | ● | |
| Depth gauge | ● | |
| VHF – telephone | ● | |
| Radar | ● | |
| Navigation lights | ● | |
| Reading lights | ● | |
| Refrigerator | ● | |
| Deepfreeze | ● | |
| Service battery | ● | |
| Starter battery | ● | |
| Thruster battery | ● | |
| telephone charger | | ● |
| I pod charger | | ● |
| Laptop | | ● |
| Tablets | | ● |
| Coffee machine | | ● |
| Watercooker | | ● |
| Microwave | | ● |
| Hairdryer | | ● |
| TV flatscreen | | ● |
| Airco 16,000 btu | | ● |
| Washing machine | | ● |
| Battery charger | | ● |
| Inverter Combi | | ● |

Suggestion: System Advanced

Explanation of symbols

- = Not in use
- = On board and used 12V
- = On board and used 24V
- = On board and used 230V 50Hz power operating on inverter, shore (or Whisper Generator)

World Class Systems Boats from 40-50 Ft

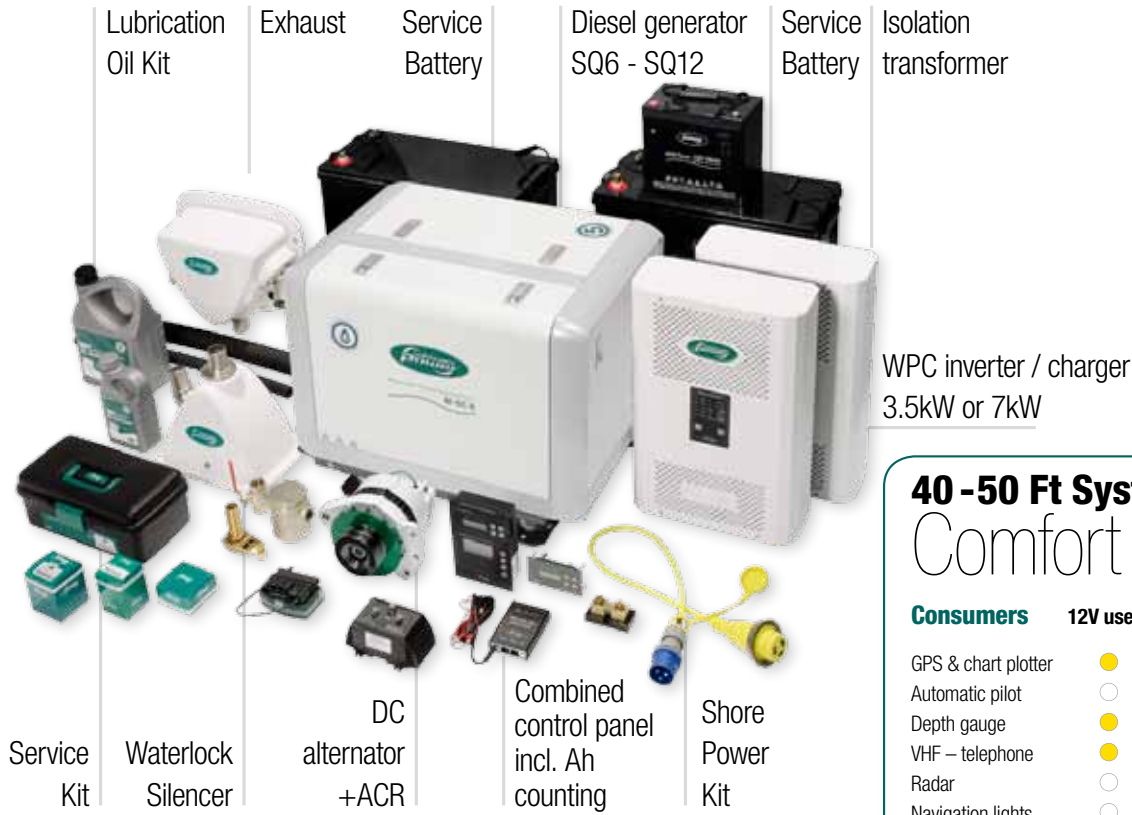


Photograph: Courtesy of Salene Yachts

Independency offered by System Admiral

Owners of larger yachts have even higher demands with respect to comfort and independency. Extended cruises are the norm and some owners even choose for permanent residence on board. Airconditioning systems, watermakers, electrical cooking, extended refrigerating, all comfort from home can now be enjoyed on board. WhisperPower has the ideal solution: a complete system including a day- and/ or a super silent night generator, dual shore power acces (120 V/50Hz, or 120V 60Hz), high power DC to AC inverters up to 20kW and high-power DC PowerCube battery chargers.

System Admiral



40 -50 Ft System

Comfort guide

| Consumers | 12V users | 24V users | 230V users (120 V/60Hz for USA) |
|------------------------|-----------|-----------|------------------------------------|
| GPS & chart plotter | ● | ○ | |
| Automatic pilot | ○ | ● | |
| Depth gauge | ● | ○ | |
| VHF – telephone | ● | ○ | |
| Radar | ○ | ● | |
| Navigation lights | ○ | ● | |
| Reading lights | ● | ○ | |
| Search lights | ○ | ● | |
| Decklights | ○ | ● | |
| Service battery | ○ | ● | |
| Starter battery | ● | ○ | |
| Thruster battery | ○ | ● | |
| Refrigerator | ○ | ● | |
| Deepfreeze | ○ | ● | |
| Heating | ○ | ● | |
| 3 x telephone charger | | | ● |
| 3 x I pod charger | | | ● |
| 2 x Laptop | | | ● |
| 2 x Tablets | | | ● |
| 2 x TV flatscreen | | | ● |
| Hairdryer | | | ● |
| Coffee machine | | | ● |
| Watercooker | | | ● |
| Dishwasher | | | ● |
| Microwave/ oven | | | ● |
| Electric cooking 3 hob | | | ● |
| Washing machine | | | ● |
| 2 x Airco 16,000 Btu | | | ● |
| Battery charger | | | ● |
| Inverter Combi | | | ● |

Explanation of symbols

○

= Not in use

●

= On board and used 12V

●

= On board and used 24V

●

= On board and used 230V 50Hz
operating on inverter or shore

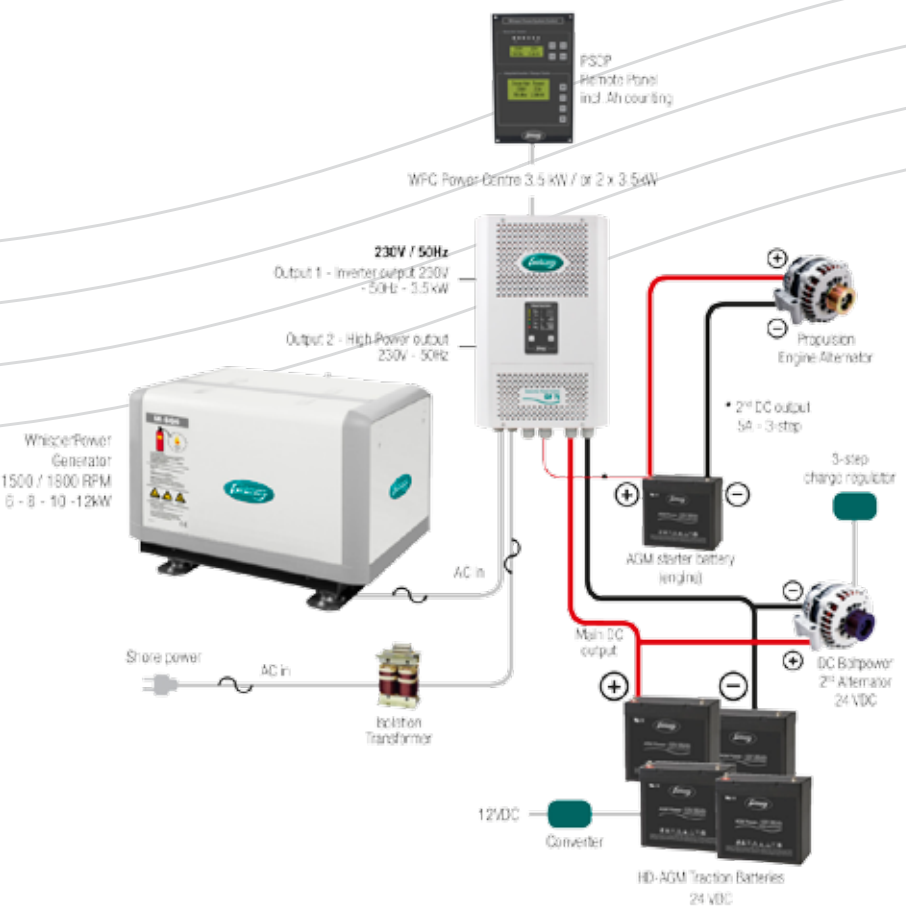
●

= On board and used 230V 50Hz operating
on WhisperPower generator or Inverter

●

= On board and used 230V 50Hz power by
WhisperPower generator only or shorepower

System Admiral



World Class Systems Boats from 50-60 Ft

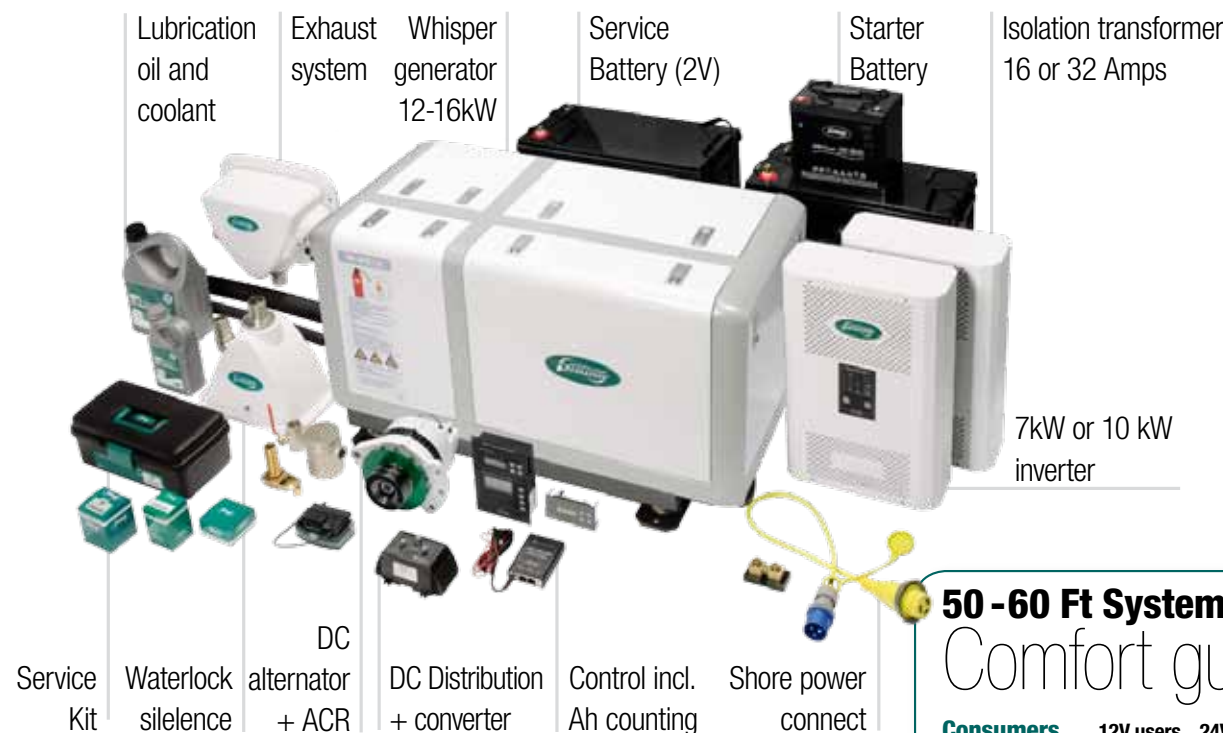


Extended Power System on board Independence

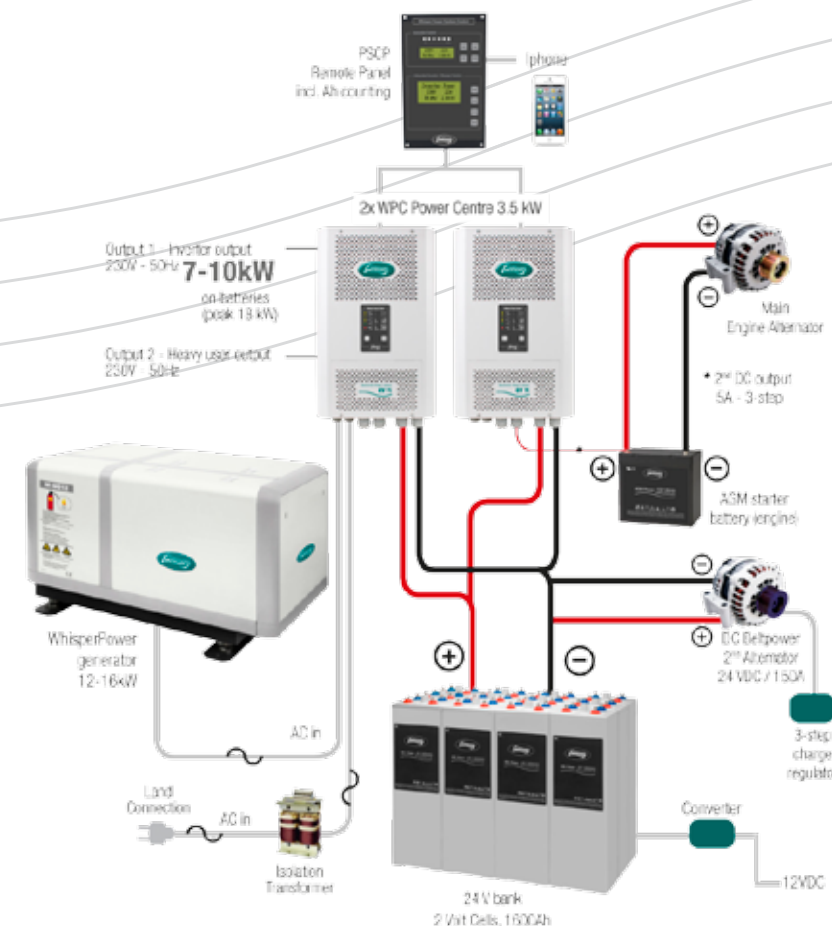
Full comfort without limitations

There is hardly any difference between the requirements of power systems for recreational or commercial craft of this size. WhisperPower's Royal Systems are consisting of parts and components which are designed to operate non-stop, including the WhisperPower generators, even under harsh circumstances. A comfortable and secure stay on board is secured, at any time, in any place on the world.

System Royal



System Royal



50 - 60 Ft System Comfort guide

| Consumers | 12V users | 24V users | 230V users (120 V/60Hz for USA) |
|--------------------------|-----------|-----------|------------------------------------|
| GPS & chart plotter | ● | ○ | |
| Automatic pilot | ○ | ● | |
| Depth gauge | ● | ○ | |
| VHF - telephone | ● | ○ | |
| Radar | ○ | ● | |
| Navigation lights | ○ | ● | |
| Reading lights | ○ | ● | |
| Search lights | ○ | ● | |
| Decklights | ○ | ● | |
| Service battery | ○ | ● | |
| Starter battery | ● | ○ | |
| Thruster battery | ○ | ● | |
| Central heating | ○ | ● | |
| 3 x telephone charger | | | ● |
| 3 x I pod charger | | | ● |
| 2 x PC | | | ● |
| 2 x Tablets | | | ● |
| 3 x TV flatscreen | | | ● |
| 2 x Coffee machine | | | ● |
| Watercooker | | | ● |
| Steam oven | | | ● |
| Microwave | | | ● |
| Electric cooking 4 hob | | | ● |
| Diving compressor | | | ● |
| Airco Chiller 60,000 Btu | | | ● |
| 2 x 120 DC PowerCube | | | ● |

Explanation of symbols

- = Not in use
- = On board and used 12V
- = On board and used 24V
- = On board and used 230V 50Hz operating on inverter or shore
- = On board and used 230V 50Hz power operated by WhisperPower generator or Inverter
- = On board and used 230V 50Hz power by WhisperPower generator only or shorepower

World Class Systems 'Big boat' applications



Round **the world**

Cruising around the globe and spending every season in another part of the world with crew and guests plus the need for supreme comfort, minimal noise disruption both day and night and full hybrid propulsion for clean and green cruising. There is certainly no room for noisy generators and exhaust fumes. So how can it be achieved? WhisperPower provides fully integrated systems for yachts from 20-60 metres enabling electrical propulsion, power regeneration during sailing and extended silent periods via their high power inverters connected to Lithium-Ion batteries.

Smart, innovative solutions **'Off the shelf'**

Superyachts of today are placing ever-increasing demands on their electrical systems, the systems are used day and night. WhisperPower is offering a full range of standard 'big boat' components and systems that are intelligent, compact and robust. Detailed below are the ranges we offer for these yachts and their features and benefits.

Super silent diesel generators 27-54kVA 1500/1800 rpm →

- WhisperPower SQ 27 - 27kVA power rating, 3 x 400VAC/ 50 - 60Hz
- Extremely compact (800h x 680w x 1260d mm, 580kg)
- Super silent, minimal vibration
- Can be paralleled with second unit → 54kVA power rating = fuel saving feature
- Available with POWER TAKE - OFF for hydraulics
- Can be fitted with Hydraulic BOOST function to deliver more hydraulic power
- Complete delivery with attractive sound shield and plug-and-play connections
- AVR regulated Stamford back-end with Booster for 20% more surge power
- Lloyds/ GL/ DNV/ ABS approval optional
- Powered by Mitsubishi long life 4 cylinder diesel engines
- Supplied with complete installation kits including exhaust system. Go to page 33



Dual function DC power chargers 100-1200 Amps →

- DC PowerCube, high power chargers, 24V/ 120A
- Ideal to convert AC dock power to DC on board power
- Parallelable - 240A/ 360A/ 480A etc.
- Battery charger suitable to charge for AGM GEL, Lithium-Ion
- Input voltage 90-260VAC, single phase or 3 x 208VAC – 50/60Hz
- Compatible with Genverter 2/3/4 cylinder for Silent Diesel Power Charging
- Lloyds/ GL/ DNV/ ABS optional. Go to page 56



High power sine wave inverters 5-30kVA →

- AC PowerCube(s) completes DC PowerCube system
- Silent power during generator-off time
- Pure sine wave output synchronizing with shore power and generator
- Inverters are able to increase generator power (peak shaving effect)
- 300% peak power, ideal to start up heavy inductive loads
- Modular concept of 3.5 or 7kVA modules, can be used in parallel
- Remote monitoring and integration to total ship system. Go to page 46 & 50



Smart frequency converters up to 30kVA

- Existing systems components are used, no extra 'box' needed
- DC PowerCubes convert shore power to a DC bus
- AC PowerCubes convert DC into the desired AC voltage/ frequency

Durable long life batteries →

- High power battery banks up to 8000Ah/ 24VDC, OPzV
- Maintenance free, can be stowed away - vertically, horizontally
- Perfect solution for extended 'dead ship' periods
- Turn- key Lithium-Ion battery banks including all relevant Charging/ discharging devices. Go to page 60



Examples of special designs



Genverter diesel generators 50 – 350kW

- Variable Speed Permanent Magnet Technology.
- All-watercooled, one-circuit indirect cooling concept.
- Operating rpm 1000 - 3000 rpm, selectable or variable.
- Extremely compact - 50kW = h x w x d 868 x 830 x 1062 in mm, 400 kg.
- Parallelable, without limitation.
- Power take-off optional.
- Delivered under class.
- Power electronics AC/ DC -DC /AC needed in order to provide 3-phase/ 50Hz hotel load.



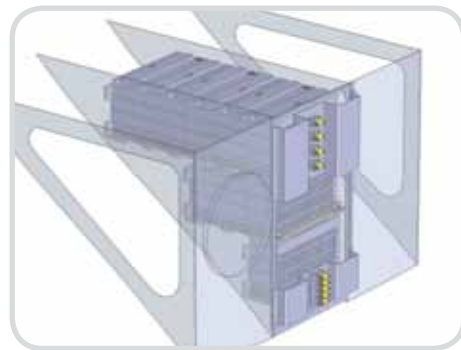
Shaft generator

- PM permanent magnet high efficient shaft alternator
- Can be put in drive train between engine and propellor
- Suitable to integrate between engine and gearbox (extended flywheel)
- Power rating 50kW/ 65kW / 100kW
- Ideal to power up hotel load during sailing via battery



Lithium cells

- One - bank Lithium stacks
- From 48VDC – 512VDC
- Any kWh capacity available
- Customized ship-integrated enclosure
- Complete with BMS / cell balancing



Various power electronics

- Hybrid systems require high class power electronics
- DC to AC and AC to DC power conversion
- Watercooled, industrial & programmable electronics
- Any power rating available (customization needed)



Hy-Gen Shaft
Alternator 50kW

Example of a Combined Power & Hybrid propulsion system



HYINVERT

Highly efficient DC to AC inverter, to operate all AC appliances on board



HYCHARGE

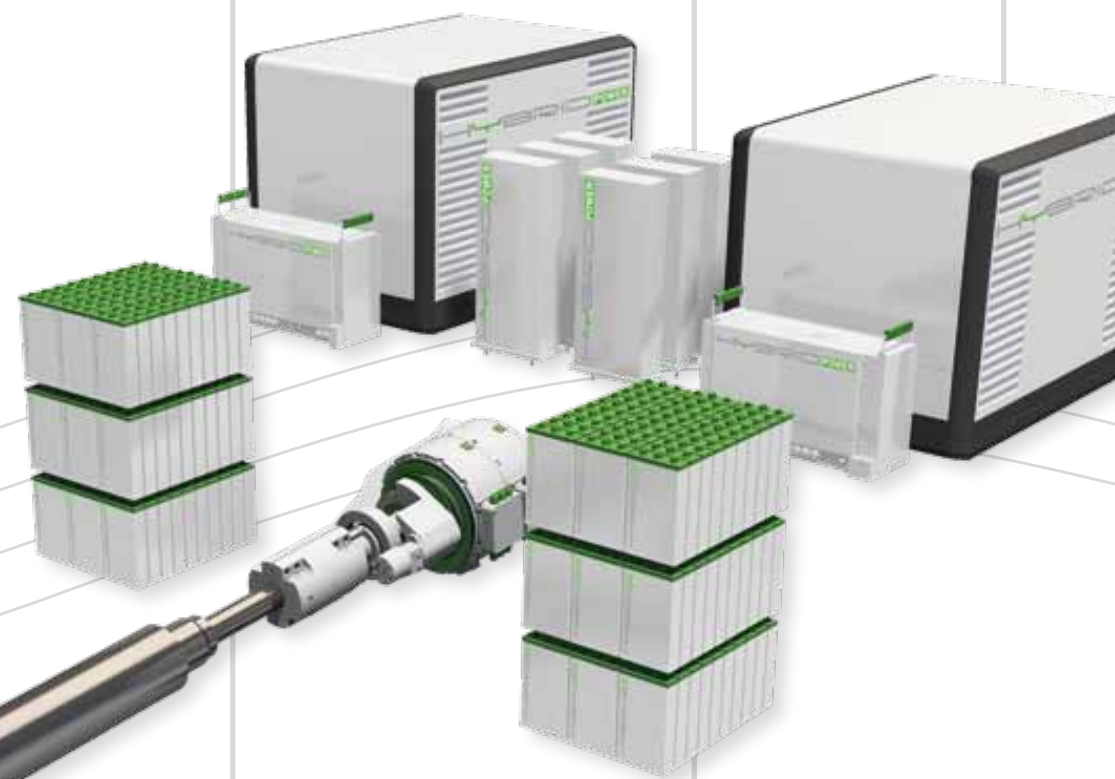
Power electronics connected to the GENVERTER generators and/or shore power, to charge the Li ION battery banks



HYGEN

Variable speed diesel generators based on PM technology, GENVERTER range.

For more
information
go to page 98



HYPROP

Propellor (pitch controlled and shaft, operated by the electrical PM motor and gearbox. (Gearbox(not shown at picture)



HYSTORE

Long life lithium-Ion battery banks - provide emission-free power for propulsion and/or power generation



Photograph: Courtesy of Marnier Shipyard, the Netherlands

World Class Systems Systems for Commercial Craft



Photograph Courtesy of Damen Shipyard, the Netherlands

Examples of use for **WhisperPower systems**

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Patrol vessels | <input checked="" type="checkbox"/> Wind farm support vessels | <input checked="" type="checkbox"/> Dredging |
| <input checked="" type="checkbox"/> Pilot boats | <input checked="" type="checkbox"/> Fast crew boats | <input checked="" type="checkbox"/> Pontoons |
| <input checked="" type="checkbox"/> Supply vessels | <input checked="" type="checkbox"/> Tug boats | <input checked="" type="checkbox"/> Cargo vessels |
| <input checked="" type="checkbox"/> Public transportation | <input checked="" type="checkbox"/> Coast guard vessels | <input checked="" type="checkbox"/> Ferries |
| <input checked="" type="checkbox"/> Tourist boats | <input checked="" type="checkbox"/> Fishing boats | <input checked="" type="checkbox"/> Military craft |

Main applications in this field:

- Auxiliary power: Genverter DC PowerCube/ 7-14kW hybrid diesel / inverter system, avoiding running of the large generator sets during night time or during off-duty intervals
- Prime power: main diesel generator, silenced and compact
- Back up power: our WPC Power Centres are perfect to operate computers, PLC's and other sensitive devices, and operate like UPS systems
- DC Power system with battery, battery charger and DC components
- DC DC converters to stabilize the DC BUS and convert DC voltage from high to low vice versa
- System components



SQ 27 1500 / 1800
compact generator

Professional **power**

Design and manufacturing of compact, ultra silent and powerful generator and inverter / battery systems, this is our main activity in the field of smallsize professional craft. Our standard SQ models fit perfect in a small location, and can be stowed away entirely thanks to the all-watercooling concept. The 'whispering' sound level is appreciated by the on-board crew, while the fleet manager is happy to see the substantial cost reduction of fuel and maintenance costs. Generator power ratings from 3 kW up to 50 kW, inverter power from 1kW - 20kW.



The bridge of a commercial vessel - a place where trouble free operation of the onboard electronics is crucial. WhisperPower's power generator back-up systems and power storage ensure a safe and trouble free trip (photograph Damen Shipyards)

Products & Specifications

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Power Generation Total Independence



Install a WhisperPower generator and give yourself ultimate freedom! Our diesel generators serve as your own on-board power plant to: one that is compact, economical, extremely quiet, reliable, long lasting and easy to operate. This chapter provides details on our entire range of generators, all of which can be easily connected and added to a complete WhisperPower system. They are all available with a complete installation kit, making life easy as literally not one single part has to be purchased from another vendor! WhisperPower is your one stop shop. Below are the product options available and a guideline on which model to select.

Genverter Series

Our Genverter® combines the latest diesel engine technology with a new way of producing electrical power. Instead of adding an alternator with fixed speed on the back of the fly wheel, we have designed a very compact permanent magnet alternator (PM), located just behind the engine. As a result, these systems are much smaller and lighter compared to traditional generators. Other important features:

- The output voltage of the generator is not dependent on the RPM (revolutions per minute) of the generator. The generator RPM

can be fixed to a position offering the optimal balance between RPM, output power, audible noise and vibration. In most cases the result is 2300 RPM.

- The PM alternator is utilizes the same cooling circuit as the main engine making the installation much more simple.
- The output voltage/ power of the PM can be used for various purposes including integration into DC systems, with our DC PowerCube concept or as an inverter based variable speed generator, our Basic range.
- Our Genverter 'I' versions are HYBRID generators: variable speed just as with our Basic version, but with additional inverter/

battery charger, our WPC Power Centre, capable of providing sine wave AC power to the various on board appliances. The battery is automatically charged by the WPC's Power Centre.

SuperCompact - SC series - 3000 / 3600 rpm

Our 3000/3600 rpm diesel generators are also extremely compact and silent. The rotation speed of these generator sets is twice the rotation speed of the 1500/1800 rpm sets, resulting in a very attractive size/ power ratio.

These sets are used when weight and size restrictions apply. Power ratings from 3kVA - 11kVA. Output voltage configurations: 120VAC / 60Hz, 230VAC - 50Hz.

SuperQuiet - SQ series, 1500 / 1800 rpm

Our low rpm diesel generators range from 5.7kVA - to 30kVA and are fitted as standard with a robust sound protection enclosure. They are also available on a chassis without a sound shield. This is our SQ - BL range. Output voltage configurations: 120VAC / 60Hz, 230VAC / 50Hz, 3 x 400VAC.

Monitoring

All our generator systems are supplied as standard with an advanced Digital Diesel Control operating & monitoring panel. It indicates all essential parameters of the system and includes an automatic start / stop option. We can also offer our extended WhisperTouch panels with not only full integration of all parameters of the electrical but also non-electrical system.



Installation parts: One-Stop-Shop

Our 'one stop shop' is unique: we are able to supply our generator systems with all the necessary installation parts. No more shopping around needed.



M-GV4



M-SC6



M-SQ12

10 reasons to buy a WhisperPower generator

- WhisperPower is quieter and cleaner
- WhisperPower is more fuel efficient
- WhisperPower generators are smaller and lighter
- WhisperPower generators are well designed
- WhisperPower generators are more reliable
- WhisperPower generators have a longer lifecycle
- WhisperPower generators integrate very well into the complete systems of WhisperPower
- WhisperPower has the most advanced and complete range in the world.
- WhisperPower systems can be serviced worldwide.
- WhisperPower offer best value for their generator sets

Selection guide

Select → order → install → enjoy your comfort

In the table below we have listed the total selection of products and the complete product range and application to help you select the correct unit:

GENVERTER Variable speed models • Go to page 24

| | |
|---------------------------|---------------------------|
| Genverter 7i - 7kW | Variable speed/ hybrid**) |
| Genverter 4 - 3.6kW Basic | Variable speed/ PM*) |
| Genverter 8 - 6kW Basic | Variable speed/ PM*) |
| Genverter 10 - 8kW Basic | Variable speed/ PM*) |

Genverter 2/1X DC PowerCube Variable speed/ PM
Genverter 3/2X DC PowerCube Variable speed/ PM

Fixed RPM/ 3000/3600 rpm • Go to page 28

| | |
|---------------|-----------|
| SC 3.5 - 3kW | fixed rpm |
| SC 6 - 5kW | fixed rpm |
| SC 8 - 6.4kW | fixed rpm |
| SC 10 - 9.4kW | fixed rpm |
| SC 11 - 11kW | fixed rpm |

Fixed RPM/ 1500/1800 rpm • Go to page 30

| | |
|-------|-------------------|
| SQ 6 | fixed rpm 50Hz |
| SQ 7 | fixed rpm 60Hz |
| SQ 8 | fixed rpm 50Hz |
| SQ 10 | fixed rpm 50Hz |
| SQ 11 | fixed rpm 60Hz |
| SQ 12 | fixed rpm 50Hz |
| SQ 15 | fixed rpm 60Hz |
| SQ 16 | fixed rpm 50Hz |
| SQ 20 | fixed rpm 50/60Hz |
| SQ 25 | fixed rpm 50/60Hz |
| SQ 30 | fixed rpm 60Hz |

Most WhisperPower diesel generators are available with
Lloyds/ DNV/ GL type approval Standard compliances: China, Russia, go to page 105

Power Generation Genverter Series

Say goodbye to space consuming, noisy and energy inefficient diesel generators that operate around the clock and say hello to the next generation of intelligent power systems available now. Our GENVERTER is available as an intelligent AC output generator, the GENVERTER Basic version, or as a 'PLUG -IN HYBRID' version, this is our GENVERTER DC POWERCUBE range.

DC-based: Genverter 1/2/3 cylinder + DC PowerCube or WPC

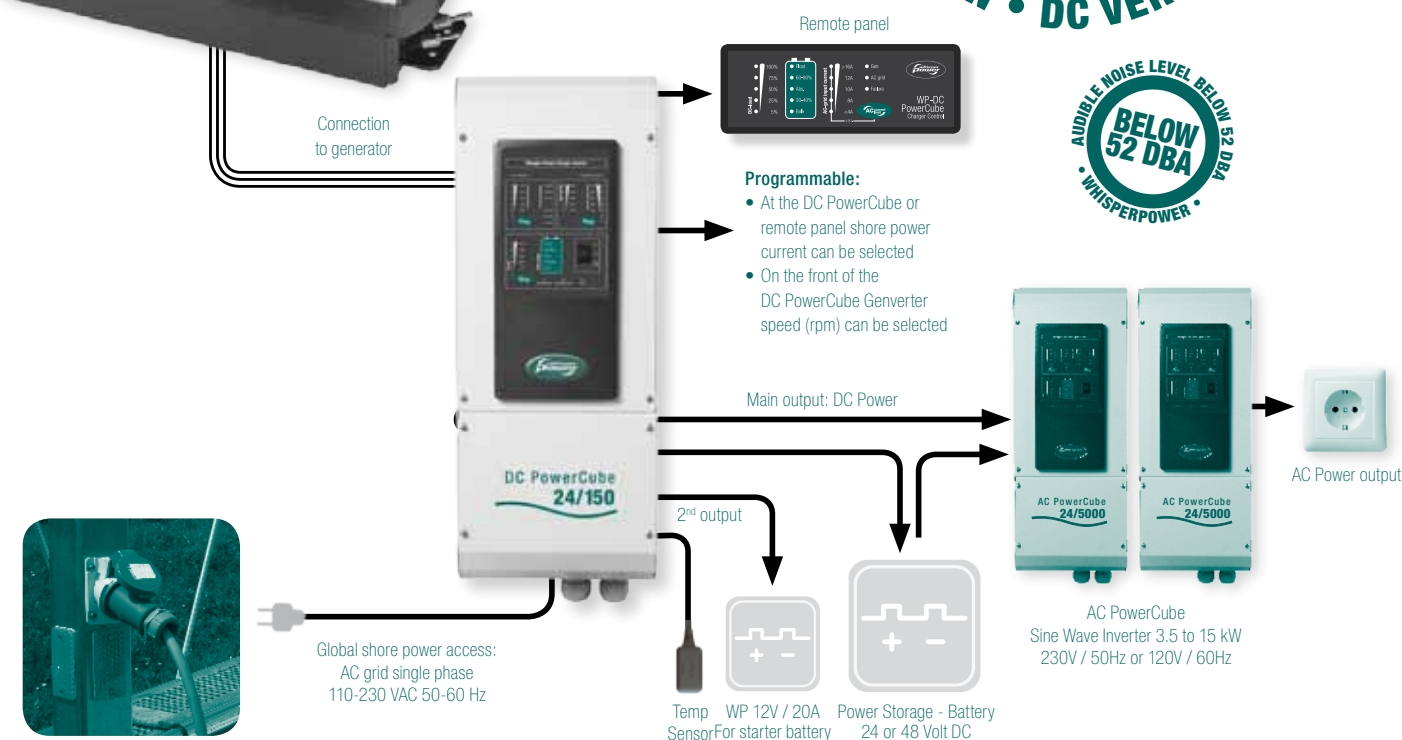
- All-in-one system
- Global plug-in facility (DC PowerCube)
- Minimal operating time
- Minimal audible noise inside and outside
- Hardly any vibration
- Selection of 2, 3.5, 4, 7 or 14kVA AC inverter power

AC-based: Genverter 2/3/4/ cylinder*, 6-8-10kVa

- 230V - 50Hz, superior sine wave
- 200% peak power, perfect to operate airco systems
- Variable speed, 1500 - 2800 rpm or fixed (selectable)
- AC load determines rotating speed
- 10% more efficient (fuel to power) than conventional systems
- Extremely silent < 52dBA
- Compact and light weight



*120V / 60Hz is coming up



Combine the GENVERTER DC PowerCube system with our 3.5 / 7 / 10kW inverter

Achieve ultimate in simplicity and functionality! Shore power is connected to the DC PowerCube to charge the battery (the Cube will operate on any shore power voltage/frequency worldwide). The GENVERTER diesel generator can be programmed to achieve the best balance between power consumption and desired rpm. In general, 2300 rpm is the optimum.

System features

- Audible noise inside a boat will be less than 48 dBA
- Automatic start stop based on energy balance
- Clean running of engine at the right load
- Continuous AC power, without interruption
- Global shore power access

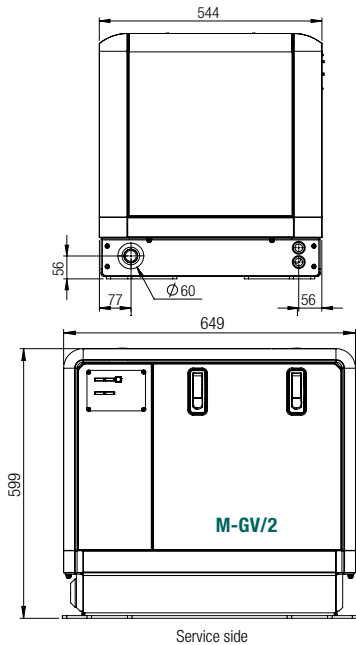
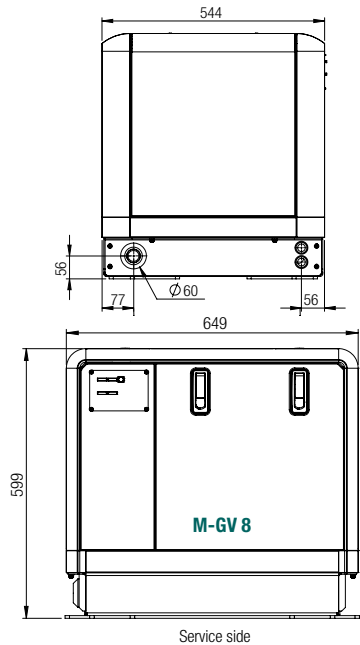
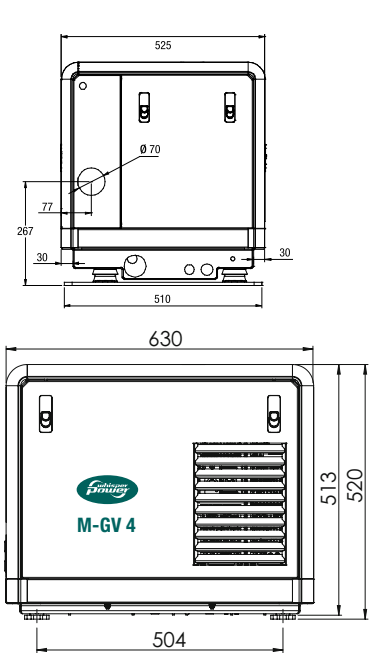
Specifications
Genverter range



| | M-GV 4 BASIC GENVERTER | M-GV 8 BASIC GENVERTER* | M-GV/2 DC POWERCUBE |
|--|---|--|--|
| | Variable speed generator 41002005 M-GV 4 Basic 230V / 3.5kW / 50Hz wet exhaust | Variable speed generator 41005005 M-GV 8 Basic 230V / 7kW / 50Hz wet exhaust | Variable speed generator 41001105 M-GV/2 wet exhaust + 60202002 DC PowerCube - 24V / 4.2kW |
| AC SYSTEM SPECIFICATIONS | | | |
| System output continuous | 3.5kW at max rpm | 7.4kW at max rpm, 6kW cont. | 150A, 24VDC out (available in 48VDC) |
| Max output current | 36A | 65A | DC |
| Output voltage / frequency | 230V / 50Hz | 230V / 50Hz | 24V / DC |
| Harmonic distortion | < 5% | < 5% | < 5% |
| Parallel operation | no | no | yes |
| ALTERNATOR SPECIFICATIONS | | | |
| Type | Permanent Magnet Alternator (PM) | Permanent Magnet Alternator (PM) | Permanent Magnet Alternator (PM) |
| RPM range | 2500-3400 rpm | 1500-2800 rpm | 1500-2400 rpm |
| Efficiency | 94% | 94% | 94% |
| ENGINE SPECIFICATIONS | | | |
| Engine | WhisperPower WP1 | Kubota | Kubota |
| Number of cylinders | 1 | 2 | 2 |
| Capacity | 300 cc | 600 cc | 600 cc |
| Engine cooling | indirect watercooling | indirect watercooling | indirect watercooling |
| Fuel consumption (no load - full load) | 0.8 - 1.5 l/hr | 1.2 - 2.5 l/hr | 1.2 - 2.0 l/hr |
| Starting | electrical - 12 Volt | electrical - 12 Volt | electrical - 12 Volt |
| Starter battery | 12V / 55Ah (optional) | 12V / 80Ah (optional) | 12V / 80Ah (optional) |
| 12V Battery charger | included | included | included |
| DIMENSIONS & WEIGHT | | | |
| Length x Width x Height | 630 mm x 480 mm x 520 mm | 690 mm x 550 mm x 580 mm | 690 mm x 550 mm x 580 mm |
| Dry weight | 92 kg | 160 kg | 180 kg (incl. DC PowerCube) |
| Dry exhaust pipe / Wet exhaust | Ø 1 inch BSP / Ø 40 mm | Ø 1 inch BSP / Ø 40 mm | Ø 1 inch BSP / Ø 40 mm |
| Location oil refill cap | top & side | top & side | top & side |
| Max. operating angle | 25° in all directions | 25° in all directions | 25° in all directions |
| REMOTE CONTROL FOR WHISPER GENERATOR | | | |
| 40209102 | DDC panel: Digital Diesel Control, standard for every Whisper generator (standard) | | |
| 40209102 | Additional 2 nd panel: DDC panel/slave version for second start/stop location. (Optional) displays, controls and pc-link you will find on www.whisperpower.com | | |

* Ask for our Datasheet M-GV 10, 8kW based on 3 cylinder Kubota

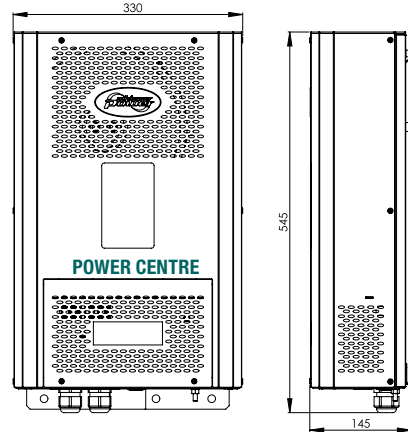
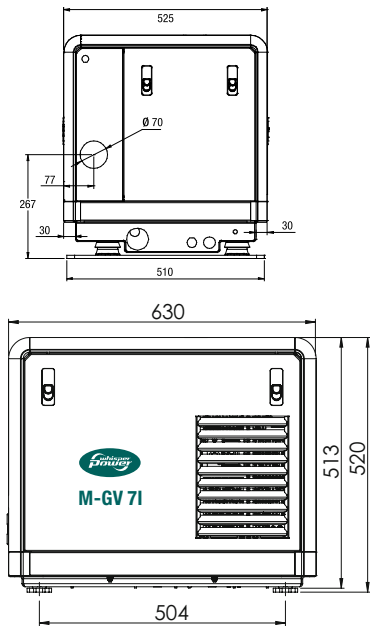
installation drawings



PSCP Power System Control Panel, standard for Genverter 7i



| | M-GV 7i INCL. 2.0KW 12V POWER CENTRE | M-GV 7i INCL. 3.5KW 24V POWER CENTRE | M-GV 7i INCL. 3.5KW 48V POWER CENTRE |
|--|--|--|--|
| | Hybrid generator variable speed 41004205 M-GV 7i 230V / 3.5kW + 2.0kW 12V Power Centre | Hybrid generator variable speed 41004405 M-GV 7i 230V / 3.8kW + 3.5kW 24V Power Centre | Hybrid generator variable speed 41004805 M-GV 7i 230V / 3.8kW + 3.5kW 48V Power Centre |
| MAIN SPECIFICATIONS | | | |
| Combined system output | 5.8kW | 7kW | 7kW |
| Generator power (running engine) | 3.5kW | 3.5kW | 3.5kW |
| Silent power (inverter mode) | 2.0kW | 3.5kW | 4.0kW |
| Peak output AC | 45A | 60A | 60A |
| Nominal voltage AC | 230VAC | 230VAC | 230VAC |
| Nominal current AC (combined) | 30.0A | 30.0A | 30.0A |
| Nominal frequency AC | 50.0Hz | 50.0Hz | 50.0Hz |
| Thd nominal operation AC | <5% | <5% | <5% |
| Leading or lagging power factor | 0,1 - 1 | 0,1 - 1 | 0,1 - 1 |
| Charge current | 12V / 100A | 24V / 90A | 48V / 50A |
| Rpm range | 2400 - 3000 | 2400 - 3000 | 2400 - 3000 |
| Capacity (starter) battery (AGM) | 12V / 55Ah (optional) | 12V / 55Ah (optional) | 12V / 55Ah (optional) |
| Starter battery charge current | 10A maintenance charger | 10A maintenance charger | 10A maintenance charger |
| Charge characteristic | 3-step, IUoUo | 3-step, IUoUo | 3-step, IUoUo |
| AC Shorepower | 190 - 260 Vac | 190 - 260 Vac | 190 - 260 Vac |
| SPECIFICATIONS DIESEL ENGINE | | | |
| Engine model | Whisper WP1 | Whisper WP1 | Whisper WP1 |
| Number of cylinders | 1 | 1 | 1 |
| Cylinder capacity | 300 cc | 300 cc | 300 cc |
| Air consumption | 0.42 m³/min @3000rpm | 0.42 m³/min @3000rpm | 0.42 m³/min @3000rpm |
| Engine cooling | indirect watercooling | indirect watercooling | indirect watercooling |
| Fuel consumption (no load - full load) | 0.8-1.5 l/hr | 0.8-1.5 l/hr | 0.8-1.5 l/hr |
| DIMENSIONS & WEIGHT | | | |
| Length x Width x Height (Generator) | 630 mm x 480 mm x 520 mm | 630 mm x 480 mm x 520 mm | 630 mm x 480 mm x 520 mm |
| Dry weight (Generator) | 92 kg | 92 kg | 92 kg |
| Length x Width x Height (WPC) | 500 mm x 360 mm x 300 mm | 500 mm x 360 mm x 300 mm | 500 mm x 360 mm x 300 mm |
| Dry weight (WPC) | 25 kg | 25 kg | 25 kg |
| Dry exhaust pipe / Wet exhaust | Ø 1 inch BSP / Ø 40 mm | Ø 1 inch BSP / Ø 40 mm | Ø 1 inch BSP / Ø 40 mm |
| Location oil refill cap | top & side | top & side | top & side |
| Max. operating angle | 25° in all directions | 25° in all directions | 25° in all directions |
| REMOTE CONTROL FOR WHISPER GENERATOR | | | |
| 60201150 | WPC-PSCP Power System Control Panel, standard for the M-GV 7i | | |





| M-SC 3.5 DIESEL GENERATOR | M-SC 3.5 DIESEL GENERATOR (USA) | M-SC 6 DIESEL GENERATOR |
|--|--|--|
| 3000 RPM Super Compact series 40900600 M-SC 3.5 230V / 50Hz MARINE, wet exhaust | 3600 RPM Super Compact series 40900655 M-SC 3.5 , USA version 120V / 60Hz MARINE, wet exhaust | 3000 RPM Super Compact series 41102005 M-SC 6 230V / 50Hz MARINE, wet exhaust |

| MAIN SPECIFICATIONS | | |
|--------------------------|---------------------------------------|---------------------------------------|
| Nominal power | 3kW at 3000 RPM | 3.2kW at 3600 rpm |
| Nominal voltage | 230V - 13A | 120V - 27A |
| Output frequency | 50Hz | 60Hz |
| Power factor / cos phi | 1 | 1 |
| Voltage tolerance | ± 7% | ± 7% |
| Frequency tolerance (Hz) | ± 5% | ± 5% |
| Voltage regulation | Capacitor | Capacitor |
| Starter battery | 12V / 55Ah (Optional) | 12V / 55Ah (Optional) |
| Battery charge current | auxiliary winding 4A | auxiliary winding 4A |
| Alternator | water-cooled, no brushes, synchronous | water-cooled, no brushes, synchronous |
| Sound level | 58dB | 58dB |

| SPECIFICATIONS DIESEL ENGINE | | |
|--|----------------|-------------------------|
| Engine model | Kubota | Kubota |
| Number of cylinders | 1 | 1 |
| Cylinder capacity | 276 cc | 16.84 in³ |
| Bore & stroke | 72 x 68 mm | 2.83' x 2.67' (inches) |
| Air consumption | 0.38 m³/min | 13.42ft³ / min |
| Engine cooling | oil-cooled | oil-cooled |
| Fuel consumption (no load - full load) | 0.7-1.2 l/hour | 0.15 - 0.26 gallon/hour |

| DIMENSIONS & WEIGHT | | |
|--------------------------------|--------------------------|--------------------------|
| Length x Width x Height | 505 mm x 400 mm x 500 mm | 19.88' x 15.74' (inches) |
| Dry weight | 97 kg | 214 lbs |
| Dry exhaust pipe / Wet exhaust | Ø 1 inch BSP / Ø 40 mm | Ø 1 inch BSP / Ø 1½" |
| Location oil refill cap | top & side | top & side |
| Max. operating angle | 25° in all directions | 25° in all directions |

| REMOTE CONTROL FOR WHISPER GENERATOR | |
|--------------------------------------|---|
| 40209102 | DDC panel: Digital Diesel Control, standard for every Whisper generator (standard) |
| 40209102 | Additional 2 nd panel: DDC panel/slave version for second start/stop location. (Optional) displays, controls and pc-link you will find on www.whisperpower.com |



DDC Remote standard
for all models. PSCP optional.

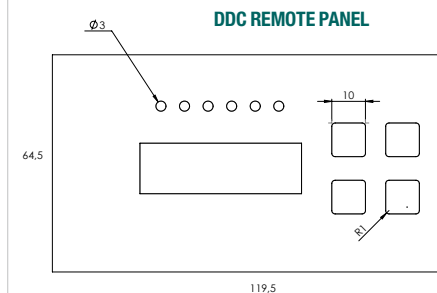
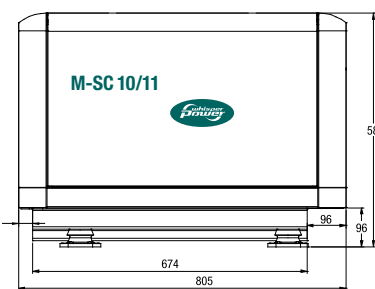
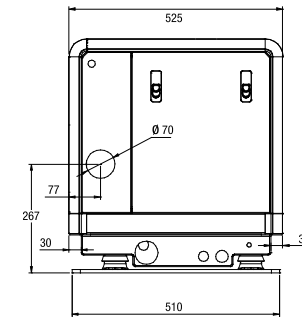
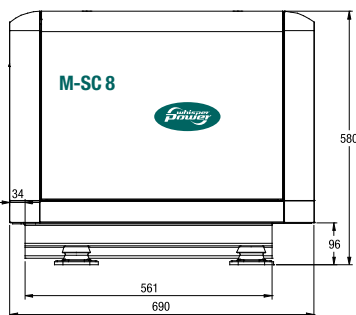
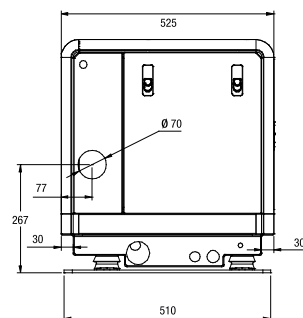
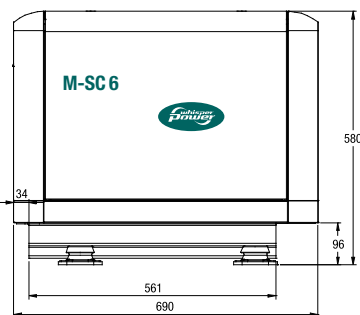
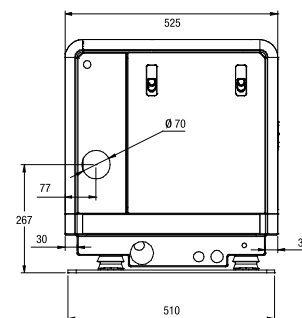
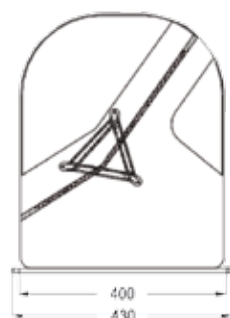
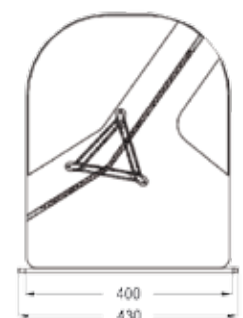
| M-SC 8 DIESEL GENERATOR | M-SC 8 DIESEL GENERATOR (USA) | M-SC 10 DIESEL GENERATOR | M-SC 11 DIESEL GENERATOR (USA) |
|--|--|---|---|
| 3000 RPM Super Compact series 41103005 M-SC 8 230V / 50Hz MARINE, wet exhaust | 3600 RPM Super Compact series 41103055 M-SC 8 , USA version 120-240V / 60Hz MARINE, wet exhaust | 3000 RPM Super Compact series 41104005 M-SC 10 230V / 50Hz MARINE, wet exhaust | 3600 RPM Super Compact series 41104055 M-SC 11 , USA version 120-240V / 60Hz MARINE, wet exhaust |

| MAIN SPECIFICATIONS | | | | |
|--------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Nominal power | 6.4kW at 3000 RPM | 8kW at 3600 rpm | 9.4kW at 3000 RPM | 11kW at 3600 rpm |
| Nominal voltage | 230V - 28A | 120/240V - 61/30A | 230V - 40A | 120/240V - 90/45A |
| Output frequency | 50Hz | 60Hz | 50Hz | 60Hz |
| Power factor / cos phi | 1 | 1 | 1 | 1 |
| Voltage tolerance | ± 5% | ± 5% | ± 5% | ± 5% |
| Frequency tolerance (Hz) | ± 1% | ± 1% | ± 1% | ± 1% |
| Voltage regulation | Capacitor | Capacitor | Capacitor | Capacitor |
| Starter battery | 12V / 80Ah (Optional) | 12V / 80Ah (Optional) | 12V / 80Ah (Optional) | 12V / 80Ah (Optional) |
| Battery charge current | alternator 40A | alternator 40A | alternator 40A | alternator 40A |
| Alternator | water-cooled, no brushes, synchronous | water-cooled, no brushes, synchronous | water-cooled, no brushes, synchronous | water-cooled, no brushes, synchronous |
| Sound level | 56dB | 56dB | 58dB | 58dB |

| SPECIFICATIONS DIESEL ENGINE | | | | |
|--------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Engine model | L2E | L2E | L3E | L3E |
| Number of cylinders | 2 | 2 | 3 | 3 |
| Cylinder capacity | 635 cc | 38.75 in³ | 952 cc | 58.9 in³ |
| Bore & stroke | 76 x 70 mm | 2.8' x 2.75' (inches) | 76 x 70 mm | 3' x 2.8' (inches) |
| Air consumption | 0.95 m³/min | 33.54ft³/min | 1.43 m³/min | 50.49ft³/min |
| Engine cooling | indirect watercooling | indirect watercooling | indirect watercooling | indirect watercooling |
| Fuel consumption (no load-full load) | 1-2.5 l/hour | 0.26-0.66 gallon/hour | 1-4 l/hour | 0.26-1.05 gallon/hour |

| DIMENSIONS & WEIGHT | | | | |
|--------------------------------|--------------------------|-------------------------------|--------------------------|--------------------------------|
| Length x Width x Height | 690 mm x 525 mm x 580 mm | 26' x 19.5' x 21.65' (inches) | 805 mm x 525 mm x 580 mm | 31.9' x 20.7' x 24.2' (inches) |
| Dry weight | 184 kg | 392 lbs | 215 kg | 463 lbs |
| Dry exhaust pipe / Wet exhaust | Ø 1 inch BSP / Ø 40 mm | Ø 1 inch BSP / Ø 1½" | Ø 1.5 inch BSP / Ø 40 mm | Ø 1 inch BSP / Ø 1½" |
| Location oil refill cap | top & side | top & side | top & side | top & side |
| Max. operating angle | 25° in all directions | 25° in all directions | 25° in all directions | 25° in all directions |

| REMOTE CONTROL FOR WHISPER GENERATOR | |
|--------------------------------------|---|
| 40209102 | DDC panel: Digital Diesel Control, standard for every Whisper generator (standard) |
| 40209102 | Additional 2 nd panel: DDC panel/slave version for second start/stop location. (Optional) displays, controls and pc-link you will find on www.whisperpower.com |





| | M-SQ 6 DIESEL GENERATOR | M-SQ 7 DIESEL GENERATOR (USA) | M-SQ 8 DIESEL GENERATOR |
|--|---|--|--|
| | 1500 RPM Super Quiet series 41105005 M-SQ 6 230V / 50Hz MARINE - 5.7kW, wet exhaust | 1800 RPM Super Quiet series 41105055 M-SQ 7 , USA version 120-240V / 60Hz MARINE - 7kW, wet exhaust | 1500 RPM Super Quiet series 41106005 M-SQ 8 230V / 50Hz MARINE, wet exhaust |
| MAIN SPECIFICATIONS | | | |
| Nominal power | 5.7kW at 1500 RPM | 7kW at 1800 rpm | 8kW at 1500 RPM |
| Nominal voltage | 230V - 25A | 120/240V -58/29A | 230V - 35A |
| Output frequency | 50Hz | 60Hz | 50Hz |
| Power factor / cos phi | 1 | 1 | 1 |
| Voltage tolerance | ± 5% | ± 5% | ± 5% |
| Frequency tolerance (Hz) | ± 1% | ± 1% | ± 5% |
| Voltage regulation | Capacitor | Capacitor | Capacitor |
| Starter battery | 12V / 80Ah (Optional) | 12V / 80Ah (Optional) | 12V / 100Ah (Optional) |
| Battery charge current | alternator 40A | alternator 40A | alternator 50A |
| Alternator | water-cooled, no brushes, synchronous | watercooled, no brushes, synchronous | water-cooled, no brushes, synchronous |
| Sound level | 51dB | 51dB | 54dB |
| SPECIFICATIONS DIESEL ENGINE | | | |
| Engine model | L3E (Mitsubishi) | L3E (Mitsubishi) | S3L2 (Mitsubishi) |
| Number of cylinders | 3 | 3 | 3 |
| Cylinder capacity | 952 cc | 58.09in³ | 1318 cc |
| Bore & stroke | 76 x 70 mm | 3 x 2.8 inch | 78 x 92 mm |
| Air consumption | 0.8 m³/min | 0.8 m³/min | 1.1 m³/min |
| Engine cooling | indirect watercooling | indirect watercooling | indirect watercooling |
| Fuel consumption (no load - full load) | 1-3 l/hour | 1-3 l/hour (0.26-0.79 gallon/hour) | 1-3 l/hour |
| DIMENSIONS & WEIGHT | | | |
| Length x Width x Height | 805 mm x 525 mm x 580 mm | 31.9 x 20.7 x 24.2 inch | 900 mm x 575 mm x 640 mm |
| Dry weight | 240 kg | 528 lbs | 334 kg |
| Dry exhaust pipe / Wet exhaust | Ø 1.5 inch BSP / Ø 40 mm | Ø 1½" (water cooled) inner thread | Ø 1.5 inch BSP / Ø 51 mm |
| Location oil refill cap | top & side | top & side | top & side |
| Max. operating angle | 25° in all directions | 25° in all directions | 25° in all directions |
| REMOTE CONTROL FOR WHISPER GENERATOR | | | |
| 40209102 | DDC panel: Digital Diesel Control, standard for every Whisper generator (standard) | | |
| 40209102 | Additional 2 nd panel: DDC panel/slave version for second start/stop location. (Optional) displays, controls and pc-link you will find on www.whisperpower.com | | |

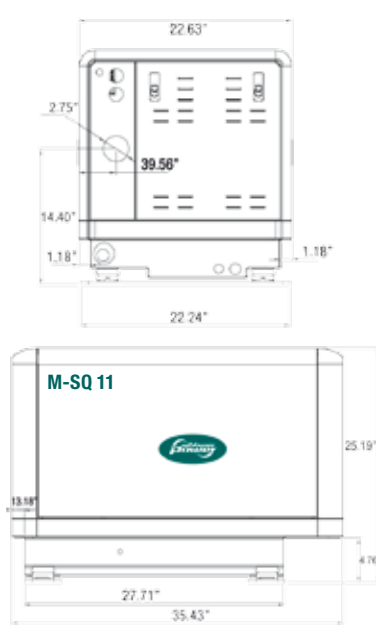
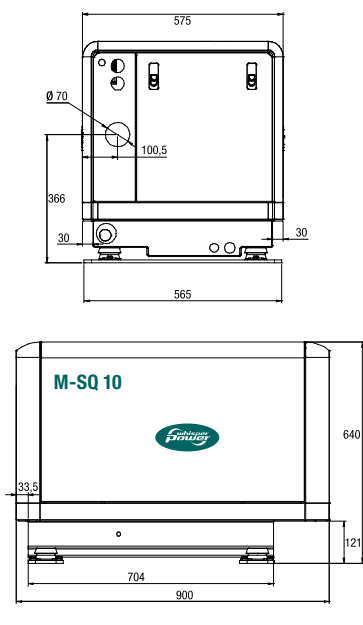
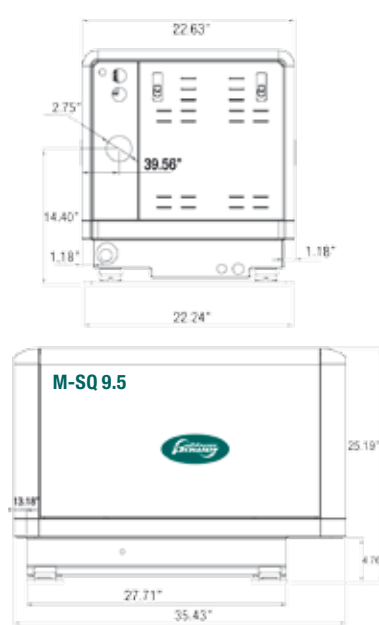
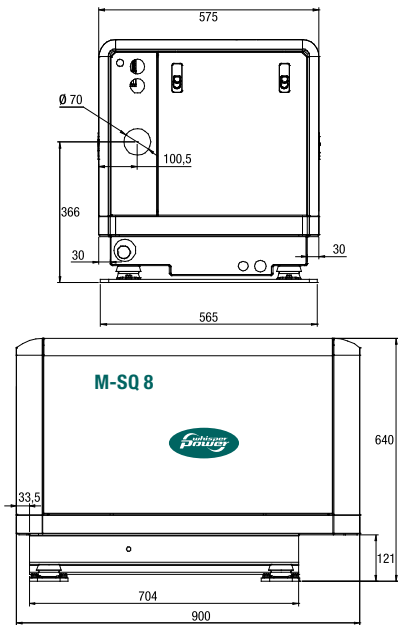
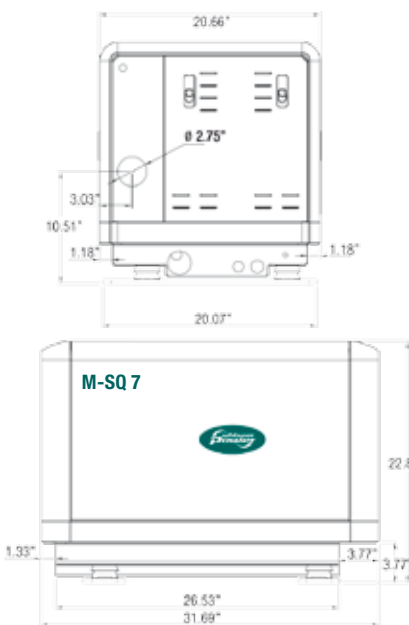
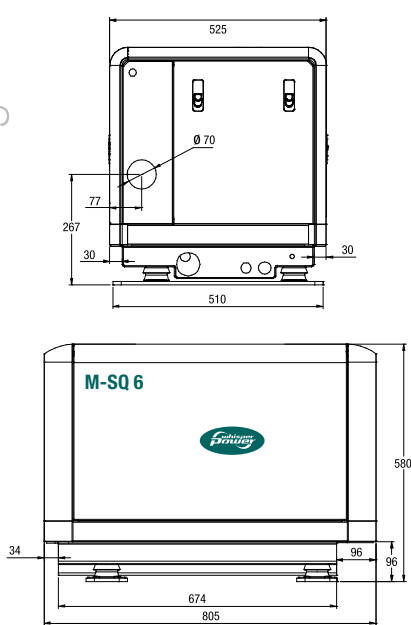


DDC Remote standard for all models. PSCP optional.



| | M-SQ 9.5 DIESEL GENERATOR (USA) | M-SQ 10 DIESEL GENERATOR | M-SQ 11 DIESEL GENERATOR (USA) |
|--|---|---|--|
| | 1800 RPM Super Quiet series 41106055 M-SQ 9.5 , USA version 120-240V / 60Hz MARINE - 9.5kW, wet exhaust | 1500 RPM Super Quiet series 41109005 M-SQ 10 230V / 50Hz MARINE, wet exhaust | 1800 RPM Super Quiet series 41109055 M-SQ 11 , USA version 120-240V / 60Hz MARINE - 11kW, wet exhaust |
| MAIN SPECIFICATIONS | | | |
| Nominal power | 9.5kW at 1800 rpm | 9.4kW at 1500 RPM | 11kW at 1800 rpm |
| Nominal voltage | 120/240V - 80/40A | 230V - 40A | 120/240V - 92/46A |
| Output frequency | 60Hz | 50Hz | 60Hz |
| Power factor / cos phi | 1 | 1 | 1 |
| Voltage tolerance | ± 5% | ± 5% | ± 5% |
| Frequency tolerance (Hz) | ± 1% | ± 1% | ± 1% |
| Voltage regulation | Capacitor | Capacitor | Capacitor |
| Starter battery | 12V / 100Ah (Optional) | 12V / 100Ah (Optional) | 12V / 100Ah (Optional) |
| Battery charge current | alternator 50A | alternator 50A | alternator 50A |
| Alternator | watercooled, no brushes, synchronous | water-cooled, no brushes, synchronous | watercooled, no brushes, synchronous |
| Sound level | 54dB | 54dB | 55dB |
| SPECIFICATIONS DIESEL ENGINE | | | |
| Engine model | S3L2 (Mitsubishi) | S3L2 (Mitsubishi) | S3L2 (Mitsubishi) |
| Number of cylinders | 3 | 3 | 3 |
| Cylinder capacity | 80.42in³ | 1318 cc | 80.42in³ |
| Bore & stroke | 3' x 3.6' inch | 78 x 92 mm | 3' x 3.6' inch |
| Air consumption | (38.84ft³/min.) | 1.1 m³/min | (38.84ft³/min.) |
| Engine cooling | indirect watercooling | indirect watercooling | indirect watercooling |
| Fuel consumption (no load - full load) | 0.26-0.79 gallon/hour | 1-3 l/hour | 0.26-0.79 gallon/hour |
| DIMENSIONS & WEIGHT | | | |
| Length x Width x Height | 35.4 x 22.6 x 25.2 inch | 900 mm x 575 mm x 640 mm | 35.4 x 22.6 x 25.2 inch |
| Dry weight | 735 lbs | 334 kg | 735 lbs |
| Dry exhaust pipe / Wet exhaust | Ø 2 inch watercooled inner thread | Ø 1.5 inch BSP / Ø 51 mm | Ø 2 inch watercooled inner thread |
| Location oil refill cap | top & side | top & side | top & side |
| Max. operating angle | 25° in all directions | 25° in all directions | 25° in all directions |
| REMOTE CONTROL FOR WHISPER GENERATOR | | | |
| 40209102 | DDC panel: Digital Diesel Control, standard for every Whisper generator (standard) | | |
| 40209102 | Additional 2 nd panel: DDC panel/slave version for second start/stop location. (Optional) displays, controls and pc-link you will find on www.whisperpower.com | | |

installation drawings





| | M-SQ 12 DIESEL GENERATOR | M-SQ 15 DIESEL GENERATOR (USA) | M-SQ 16 DIESEL GENERATOR |
|--|---|--|--|
| | 1500 RPM Super Quiet series 41107005 M-SQ 12 230V / 50Hz MARINE | 1800 RPM Super Quiet series 41107055 M-SQ 15 , wet exhaust, USA version 120-240V/60Hz MARINE - 15kW, dual voltage | 1500 RPM Super Quiet series 41108005 M-SQ 16 230V / 50Hz MARINE |
| MAIN SPECIFICATIONS | | | |
| Nominal power | 12kW at 1500 RPM | 15kW at 1800 rpm | 16kW at 1500 RPM |
| Nominal voltage | 230V - 52A / 3-phase optional | 120/240V - 125/62A | 230V - 70A / 3-phase optional |
| Output frequency | 50Hz | 60Hz | 50Hz |
| Power factor / cos phi | 1 | 1 | 1 |
| Voltage tolerance | ± 5% | ± 5% | ± 5% |
| Frequency tolerance (Hz) | ± 1% | ± 1% | ± 3% |
| Voltage regulation | Capacitor | Capacitor | Capacitor |
| Starter battery | 12V / 100Ah (Optional) | 12V / 100Ah (Optional) | 12V / 145Ah (Optional) |
| Battery charge current | alternator 50A | alternator 50A | alternator 50A |
| Alternator | water-cooled, no brushes, synchronous | watercooled, no brushes, synchronous | water-cooled, no brushes, synchronous |
| Sound level | 55dB | 56dB | 56dB |
| SPECIFICATIONS DIESEL ENGINE | | | |
| Engine model | S4L2 (Mitsubishi) | S4L2 (Mitsubishi) | S4Q2 (Mitsubishi) |
| Number of cylinders | 4 | 4 | 4 |
| Cylinder capacity | 1758 cc | 107.28 in³ | 2505 cc |
| Bore & stroke | 78 x 92 mm | 3' x 3.6' inches | 88 x 103 mm |
| Air consumption | 1.5 m³/min | 52.97ft³/min. | 2.1 m³/min |
| Engine cooling | indirect watercooling | indirect watercooling | indirect watercooling |
| Fuel consumption (no load - full load) | 1-4 l/hour | 0.26-1.05 gallon/hour | 1-5 l/hour |
| DIMENSIONS & WEIGHT | | | |
| Length x Width x Height | 1060 mm x 575 mm x 640 mm | 41.7x22.6x25.2 inch | 1160 mm x 680 mm x 700 mm |
| Dry weight | 380 kg | 836 lbs | 454 kg |
| Dry exhaust pipe / Wet exhaust | Ø 1.5 inch BSP / Ø 51 mm | Ø 2 inch watercooled inner thread | Ø 1.5 inch BSP / Ø 51 mm |
| Location oil refill cap | top & side | top & side | top |
| Max. operating angle | 25° in all directions | 25° in all directions | 25° in all directions |
| REMOTE CONTROL FOR WHISPER GENERATOR | | | |
| 40209102 | DDC panel: Digital Diesel Control, standard for every Whisper generator (standard) | | |
| 40209102 | Additional 2 nd panel: DDC panel/slave version for second start/stop location. (Optional) displays, controls and pc-link you will find on www.whisperpower.com | | |



DDC Remote standard for all models. PSCP optional.

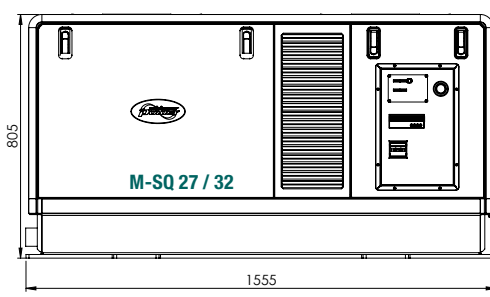
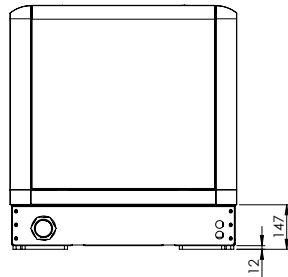
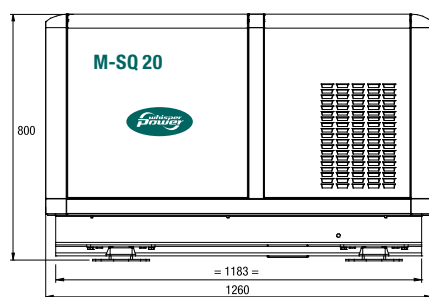
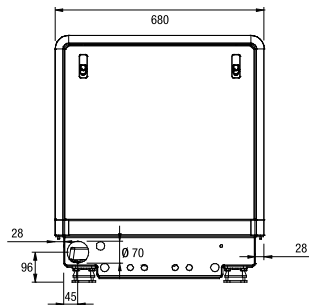
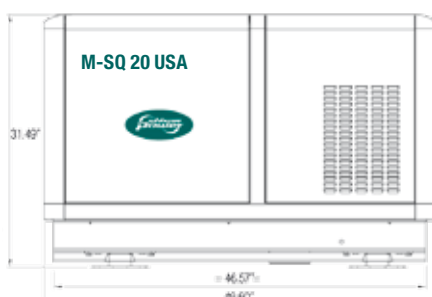
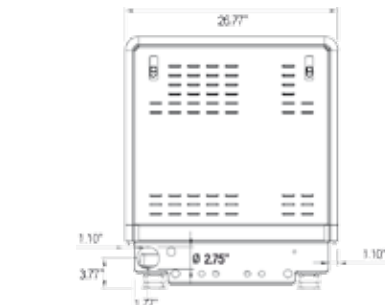
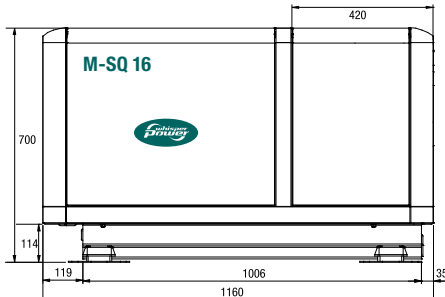
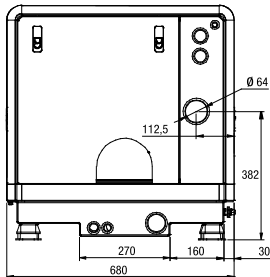
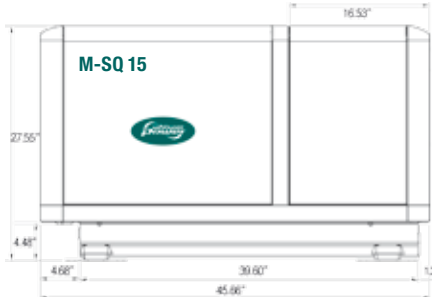
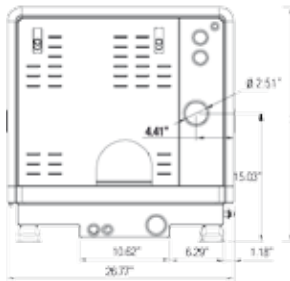
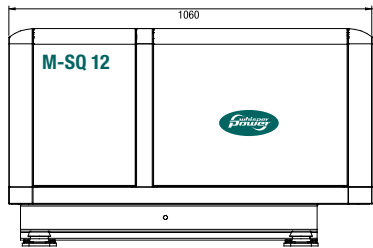
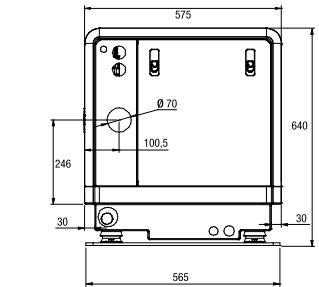


* Available in
M-SQ 32 60Hz
(41201355)

| | M-SQ 20 DIESEL GENERATOR (USA) | M-SQ 20 DIESEL GENERATOR | M-SQ 27 DIESEL GENERATOR* |
|--|---|--|--|
| | 1800 RPM Super Quiet series 41108055 M-SQ 20 , wet exhaust, USA version 120-240V / 60Hz MARINE - 20kW, Dual Voltage | 1500 RPM Super Quiet series 41101205 M-SQ 20 230V / 50Hz MARINE | 1500 RPM Super Quiet series 41201305 M-SQ 27 3-phase 230V-400V / 50Hz MARINE - 25kW |
| MAIN SPECIFICATIONS | | | |
| Nominal power | 20kW at 1800 rpm | 20kW at 1500 RPM | 25kW at 1500 RPM |
| Nominal voltage | 230V - 13A | 230V - 87A | 230V-400V - 3x39A |
| Output frequency | 60Hz | 50Hz | 50Hz |
| Power factor / cos phi | 1 | 1 | 1 |
| Voltage tolerance | ± 5% | ± 2% | ± 2% |
| Frequency tolerance (Hz) | ± 3% | ± 3% | ± 3% |
| Voltage regulation | Capacitor | AVR | AVR |
| Starter battery | 12V / 145Ah (Optional) | 12V / 145Ah (Optional) | 12V / 145Ah (Optional) |
| Battery charge current | alternator 50A | alternator 50A | alternator 50A |
| Alternator | water-cooled, no brushes, synchronous | air-cooled, no brushes, synchronous | air-cooled, no brushes, synchronous |
| Sound level | 58dB | 58dB | 58dB |
| SPECIFICATIONS DIESEL ENGINE | | | |
| Engine model | S4Q2 (Mitsubishi) | S4S (Mitsubishi) | S4S (Mitsubishi) |
| Number of cylinders | 4 | 4 | 4 |
| Cylinder capacity | 152.86in³ | 3331 cc | 3331 cc |
| Bore & stroke | 3.5'x4' inch | 94 x 120 mm | 94 x 120 mm |
| Air consumption | 74.16 ft³/min. at 1800 rpm | 2.8 m³/min | 2.8 m³/min |
| Engine cooling | indirect watercooling | indirect watercooling | indirect watercooling |
| Fuel consumption (no load - full load) | 0.26-1.05 gallon/hour | 1-6 l/hour | 1-8 l/hour |
| DIMENSIONS & WEIGHT | | | |
| Length x Width x Height | 45.7 x 26.8 x 27.6 inch | 1260 mm x 680 mm x 800 mm | 1550 mm x 749 mm x 805 mm |
| Dry weight | 1199 lbs | 580 kg | 640 kg |
| Dry exhaust pipe / Wet exhaust | Ø 2 inch BSP / Ø 40 mm | Ø 2 inch BSP / Ø 63 mm | Ø 2 inch BSP / Ø 63 mm |
| Location oil refill cap | top | top | top |
| Max. operating angle | 25° in all directions | 25° in all directions | 25° in all directions |
| REMOTE CONTROL FOR WHISPER GENERATOR | | | |
| 40209102 | DDC panel: Digital Diesel Control, standard for every Whisper generator (standard) | | |
| 40209102 | Additional 2 nd panel: DDC panel/slave version for second start/stop location. (Optional) displays, controls and pc-link you will find on www.whisperpower.com | | |

Go to www.whisperpower.com to find individual datasheets on each model

installation drawings



Delta Exhaust in detail

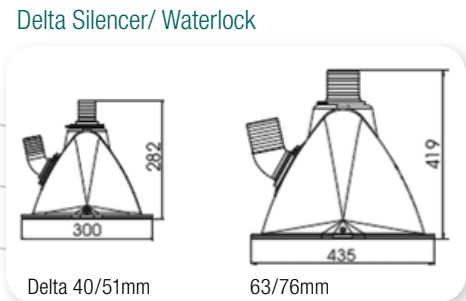
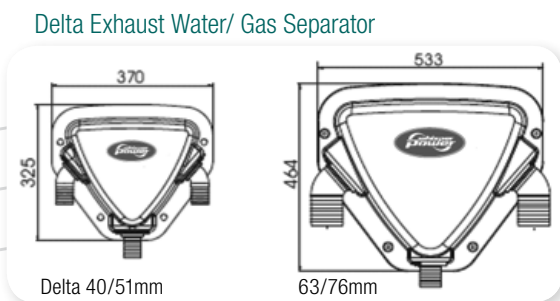
WhisperPower's installation kits are essential to ensure correct and professional installation. This applies to our DELTA exhaust system. These are not only designed for our WhisperPower generator, but are ideal to manage engine noise, smoke, vibration as well as overboard discharges of engines and generators in general. Our exhaust kits are composed as follows.

- Our DELTA silencers/ waterlocks are designed for engines and generators positioned below the waterline. This system prevents the engine from the return flow of cooling water. An important additional feature and function is the noise reduction of the engine.
- Our DELTA water/ gas separator is designed to shift the exhaust fumes from the cooling water via two outlets: one above the waterline (fumes) and the second to discharge the cooling water. As a consequently, the exhaust noise is reduced drastically with no splash noise.
- Our DELTA exhaust parts are made from fire proof polyester and fully comply with ABYC regulations
- Our kits include hoses (certified to ISO 13363/ marine use), heavy duty hose clamps, seacocks and through-hull fittings



Delta Exhaust Water/ Gas Separator
Available as a complete kit with hoses, seacocks and through-hull fittings or simply as a silencer /waterlock.

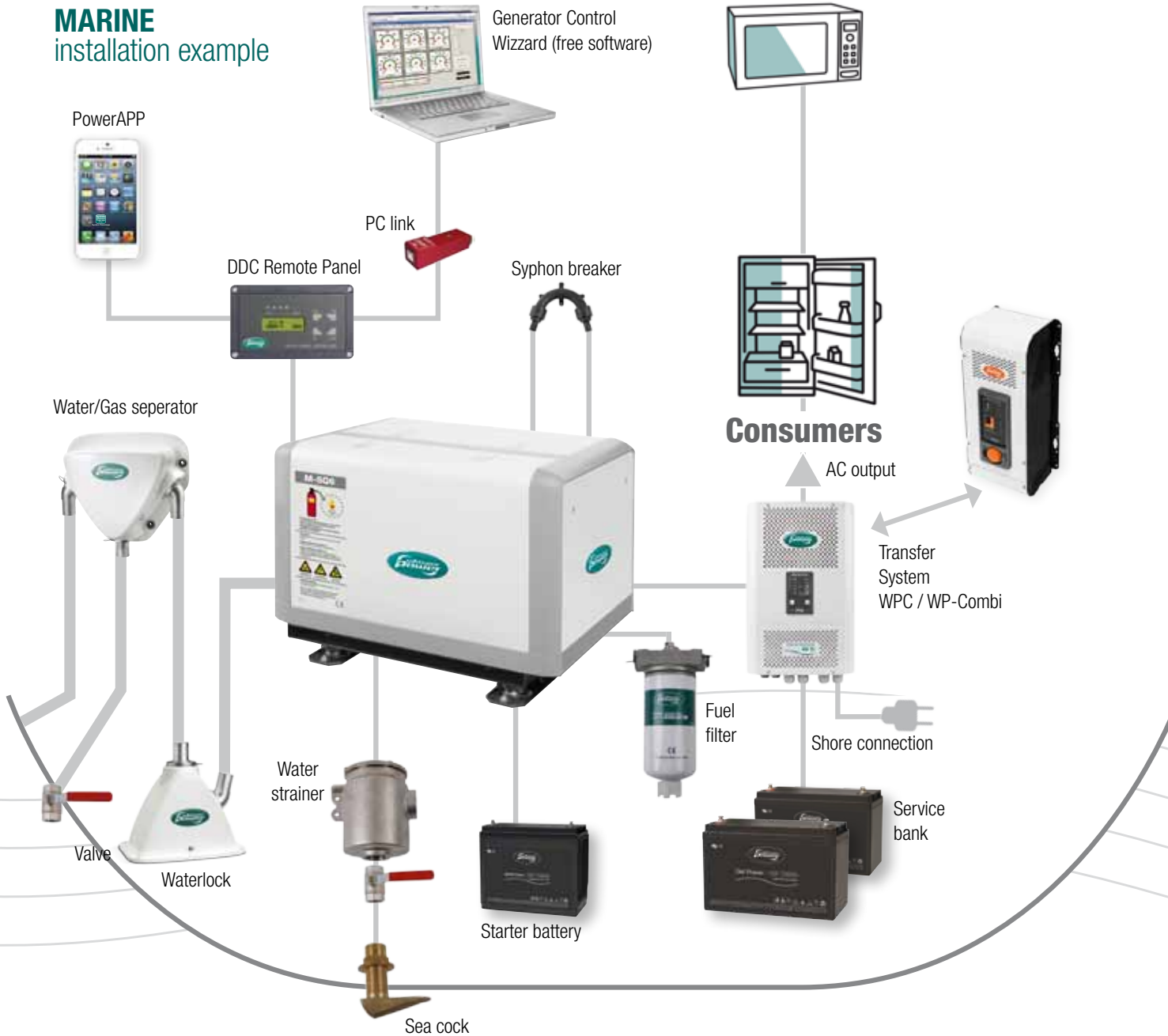
Delta Silencer/ Waterlock
Available as a complete kit or simply as an exhaust silencer / waterlock in three sizes suitable for all engines or standard generators from 3kW - 30kW



Essential installation components for a perfect system

The following page provide an over view of all the essential system components. We recommend that only original WhisperPower parts are used. We supply parts as KITS for all models available, making it easy to complete the installation. All parts are high quality products and specifically designed for their function.

MARINE installation example



Power generation
Installation accessories



Complete installation
with Delta Waterlock
and Delta separator



| MARINE INSTALLATION KITS | | | |
|--------------------------|--|--------------------------------|---|
| 40230201 | Water inlet kit 12.5 mm (1/2") | | D |
| 40230211 | Water inlet kit 20 mm (3/4") | | D |
| 40230221 | Water inlet kit 25 mm (1") | | D |
| 40230272 | Syphon breaker kit 12.5 mm (1/2") | | D |
| 40230273 | Syphon breaker kit 20 mm (3/4") | | D |
| 40230274 | Syphon breaker kit 25 mm (1") | | D |
| 40230251 | DELTA Exhaust kit 40 mm (1 5/8") | | D |
| 40230252 | DELTA Exhaust kit 51 mm (2") | | D |
| 40230254 | DELTA Exhaust kit 63 mm (2 1/2") | | D |
| 40230093 | DELTA Silencer/waterlock | 40 mm | D |
| 40230094 | DELTA Silencer/waterlock | 51 mm | D |
| 40230190 | DELTA Silencer/waterlock L 51 | 16 litre | D |
| 40230191 | DELTA Silencer/waterlock L 63 | 16 litre | D |
| 40230192 | DELTA Silencer/waterlock L 76 | 16 litre | D |
| 40230261 | DELTA Water-gas separator kit (1 5/8") | 40 mm | D |
| 40230262 | DELTA Water-gas separator kit (2") | 51 mm | D |
| 40230264 | DELTA Water-gas separator kit (2 1/2") | 63 mm | D |
| 40230097 | DELTA Water-gas separator | 40 mm | D |
| 40230098 | DELTA Water-gas separator | 51 mm | D |
| 40230193 | DELTA Water-gas separator L 51 | 16 litre | D |
| 40230194 | DELTA Water-gas separator L 63 | 16 litre | D |
| 40230195 | DELTA Water-gas separator L 76 | 16 litre | D |
| 40201320 | Dry exhaust kit 1' for the M-SC 3.5 / 6 / 10 / 11 and de M-SQ 6 / 7 - keel cooling | | H |
| 40201875 | Dry exhaust kit 1 1/2' for the M-SQ 8 / 9.5 / 10 / 11 / 12 / 15 / 16 / 20 - keel cooling | | H |
| 40201889 | Dry exhaust kit 2' for the M-SQ 27 / 30 - keel cooling | | H |
| 40201303 | Box cooler kit for M-SC 6 and the M-SQ 6 / 7 | | D |
| 40201873 | Box cooler kit for M-SQ 8 / 9.5 / 10 / 11 / 12 / 15 | | D |
| 40201874 | Box cooler kit for M-SQ 16 / 20 - 60Hz | | D |
| 40201894 | Box cooler kit for M-SQ 27 / 30 and M-SQ 20 - 50Hz | | D |
| 40230205 | Universal fuel kit | | U |
| 40230207 | Base plate kit M-SC 3.5 (includes art. no. 40230217) | | D |
| 40230209 | Base plate kit M-SC 6P / 8P (includes art. no. 40230217) only polyester version | | D |
| 40230217 | Anti-vibration mounts, up to 280 kg | | D |
| 50220057 | Rubber flexible coolant hose (1/2") | 13 x 21 mm (drum 20 m) | V |
| 50220011 | Rubber flexible coolant hose (3/4") | 18 x 26 mm (drum 20 m) | V |
| 50220012 | Rubber flexible coolant hose (1") | 25 x 34 mm (drum 20 m) | V |
| 50220013 | Rubber flexible coolant hose (1 1/4") | 32 x 41 mm (drum 20 m) | V |
| 50220055 | Transaprant coolant hose with metal spiral | 13 x 19 mm (drum 20 m) | V |
| 50220056 | Transaprant coolant hose with metal spiral | 19 x 26 mm (drum 20 m) | V |
| 50220050 | Transaprant coolant hose with metal spiral | 25 x 33 mm (drum 20 m) | V |
| 50220063 | Marine fuel hose for diesel | 8 x 16 mm (drum 20 m) | V |
| 50220033 | Exhaust hose (1 5/8") | 40 mm Ø (inner diameter) | V |
| 50220035 | Exhaust hose (2") | 51 mm Ø (inner diameter) | V |
| 50220036 | Exhaust hose (2 1/2") | 63 mm Ø (inner diameter) | V |
| 50213070 | Battery cable Red | 16 mm ² (drum 50 m) | V |
| 50213071 | Battery cable Black | 16 mm ² (drum 50 m) | V |
| 50213075 | Battery cable Red | 25 mm ² (drum 25 m) | V |
| 50213076 | Battery cable Black | 25 mm ² (drum 25 m) | V |
| 50213085 | Battery cable Red | 35 mm ² (drum 25 m) | V |
| 50213086 | Battery cable Black | 35 mm ² (drum 25 m) | V |

The kits from WhisperPower

The A-kit contains all the spare parts which should be replaced on a regular basis, such as filters and belts. An A-kit should ALWAYS be ordered when ordering a new WhisperPower generator. The B-kit comprises of components that may eventually need to be replaced, depending on operating hours. Our B-kits are more extensive, including seals and various mechanical parts. For long trips it is advisable to take a B-kit with you.



| SERVICE KITS FOR MARINE USE | | |
|-----------------------------|--|---|
| 40401160 | A-kit W-GV4 / 7i mobile | U |
| 40401161 | B-kit W-GV4 / 7i mobile | U |
| 40401170 | A-kit M-GV4 / 7i marine | U |
| 40401171 | B-kit M-GV4 / 7i marine | U |
| 40201260 | A-kit SC-3.5 - 3000 rpm | U |
| 40201860 | A-kit M-SC 6 and M-SC 10 - 3000 rpm | U |
| 40201861 | B-kit M-SC 6 - 3000 rpm | U |
| 40201761 | B-kit M-SC 10 - 3000 rpm | U |
| 40201860 | A-kit M-SQ 6 - 1500 / 1800 rpm | U |
| 40201761 | B-kit M-SQ 6 - 1500 / 1800 rpm | U |
| 40201460 | A-kit M-SQ 8, M-SQ 10 and M-SQ 12 -1500 / 1800 rpm | U |
| 40201653 | B-kit M-SQ 8 and M-SQ 10 - 1500 / 1800 rpm | U |
| 40201461 | B-kit M-SQ 12 - 1500 / 1800 rpm | U |
| 40201360 | A-kit M-SQ 16 - 1500 / 1800 rpm | U |
| 40201361 | B-kit M-SQ 16 - 1500 / 1800 rpm | U |
| 40201560 | A-kit M-SQ 20 and M-SQ 27 - 1500 / 1800 rpm | U |
| 40201561 | B-kit M-SQ 20 and M-SQ 27 - 1500 / 1800 rpm | U |

| WPL WHISPER POWER LUBRICANTS & LIQUIDS | | |
|--|---|---|
| 40222214 | WPL Coolant G12, Coolant, 4 litre | V |
| 40222201 | WPL-10w40 General, Motoroil, 1 litre | V |
| 40222204 | WPL-10w40 General, Motoroil, 4 litre | V |
| 40222224 | WPL 10w40 Premium Long Drain, Motoroil, 4 litre | V |

| CALORIFIER KIT - HOT WATER FROM THE GENERATOR | | |
|---|---|---|
| 40245030 | Calorifier kit for the M-SC 6 / 8 / 10 and M-SQ 6 | D |
| 40245031 | Calorifier kit for the M-SC 8 / 10 / 12 | D |



Complete fuel kit comprising: fuel filter /
water separator, connecting nipples,
swivels and hose clamps



Flexible coolant hose
available in all sizes



Ask for our new
SparePartsCatalogue



Using the on-board engine as a generator

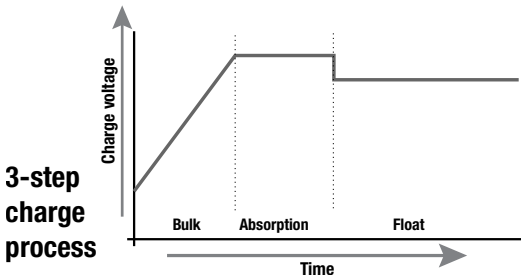
DC BeltPower

The propulsion engine of a sail or motor yacht is, in general, equipped with an average power alternator, designed to charge the starter battery. These alternators are not powerful enough to charge the service battery. In addition, the charge voltage of these alternators is kept on a float level. This is not very helpful when you want to

charge the service battery to 100% quickly. WhisperPower's BeltPower alternators solve this problem. We recommend installing the DC Beltpower as a second alternator, dedicated to charging the service battery as a single battery or the various separate batteries, if using our WBI battery isolator.

Features

- Heavy duty DC alternator for 12 or 24 VDC
- Power current from 75 to 150 Amps
- High charge current even at low RPM
- ACR®* 3-step charge system, ensuring a fast and complete charge of the battery
- Automatic voltage control and temperature sensing by sensor on battery
- Programmable for GEL, AGM or Lithium batteries
- Complete plug and play
- Brackets to mount the alternator not included, (advice available)



DC Beltpower's way of charging is identical to the charge characteristic of the WhisperPower battery chargers and Combi's

Benefits

- On average, batteries can be charged within 1 hour of engine running time
- A complete charge is effectuated by means of the ACR voltage regulator
- Special winding of the alternator ensure a high charge current at low running speed of the engine
- Standard 12V or 24VDC alternator can be kept in place - no change of standard engine configuration
- Inverters can now be used up to 3kW (recommendation) in combination with the DC Beltpower
- Smart voltage drop free Whisper WBI Battery Isolator can be installed to charge up to three separate batteries
- Can be used with any engine



The system

- DC Beltpower
- ACR Charge regulator
- WBI Battery isolator
- Mounting bracket to connect the alternator to the engine
- Battery Bank



Technical Data

| DC BELT POWER - OUTPUT ALTERNATORS - 12 AND 24V | |
|---|--|
| 60212091 | WP-DC Beltpower 12V / 90A Alternator, incl. ACR charge regulator and connection cable, Temp. Sensor, WP Connect |
| 60212131 | WP-DC Beltpower 12V / 130A Alternator, incl. ACR charge regulator and connection cable, Temp. Sensor, WP Connect |
| 60212161 | WP-DC Beltpower 12V / 160A Alternator, incl. ACR charge regulator and connection cable, Temp. Sensor, WP Connect |
| 60224076 | WP-DC Beltpower 24V / 75A Alternator, incl. ACR charge regulator and connection cable, Temp. Sensor, WP Connect |
| 60224111 | WP-DC Beltpower 24V / 110A Alternator, incl. ACR charge regulator and connection cable, Temp. Sensor, WP Connect |
| 60224151 | WP-DC Beltpower 24V / 150A Alternator, incl. ACR charge regulator and connection cable, Temp. Sensor, WP Connect |

| DC BELTPOWER IS AVAILABLE WITH THE FOLLOWING PULLEYS: | |
|---|---|
| 60212001 | Pulley Double V 5/8" 73,6mm for 12V / 90A Beltpower |
| 60212006 | Pulley Flat belt 7/8" 89mm for 12V / 130A;12V/160A;24V/75A;24V/110A;24V/150A Alternator |

| OPTIONAL | |
|----------|---|
| 60212002 | Pulley Flat belt 5/8" 73,6mm for 12V / 90A Alternator (option) |
| 60212005 | Pulley Double V 7/8" 89mm for 12V / 130A;12V/160A;24V/75A;24V/110A;24V/150A Alternator (option) |

| ACR CHARGE REGULATOR, BOSCH | |
|-----------------------------|---|
| 60115100 | WP-ACR 12V Alternator Charge Regulator, incl. temp. Sensor and WP Connect |
| 60115200 | WP-ACR 24V Alternator Charge Regulator, incl. temp. Sensor and WP Connect |

Example of use – DC Beltpower installed as the 2e alternator on a propulsion engine. An extremely powerful generator!



Automatic Current Regulator (ACR) supplied as complete kit – includes cable harness to connect the ACR to the DC alternator, temperature sensor and 6 metres of cable.

AC power directly from the engine

AC BeltPower

If space restrictions make it difficult to install a WhisperPower generator and direct 230V 50 Hz power is needed, our AC Beltpower might be the solution. We offer a 3.5kVA and a 5kVA model of this ‘engine driven’ generator. The system consists of a compact alternator and an inverter box, converting the alternator power into a pure

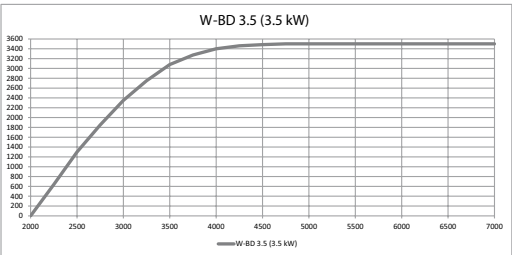
Features

- Choice of 3.5 kVA or 5 kVA models
- Very compact solution
- Alternator and inverter connected by plug-and-play cable loom
- Pure sine wave output, with high peak power
- Even at low rpm sufficient output power
- WPC Power Centre can run in parallel with the AC Beltpower to reinforce the output
- Seamless switching from WPC inverter to AC Beltpower vice versa
- Mounting brackets optional - support available from WhisperPower installer

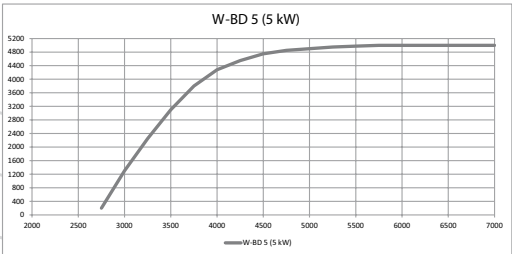
230V 50Hz sine wave power. This can be used to operate small air conditioning units, tools, pumps etc. For practicality, why not also install the WPC inverter charger as an extension of the AC Beltpower system to charge the auxiliary battery and provide silent power after the engine has been switched off!

Benefits

- AC Beltpower replaces small auxiliary generator
- No extra engine needed - one engine for all functions, propulsion and power
- Pure sine wave will work with all AC appliances
- Can be integrated with WPC power system



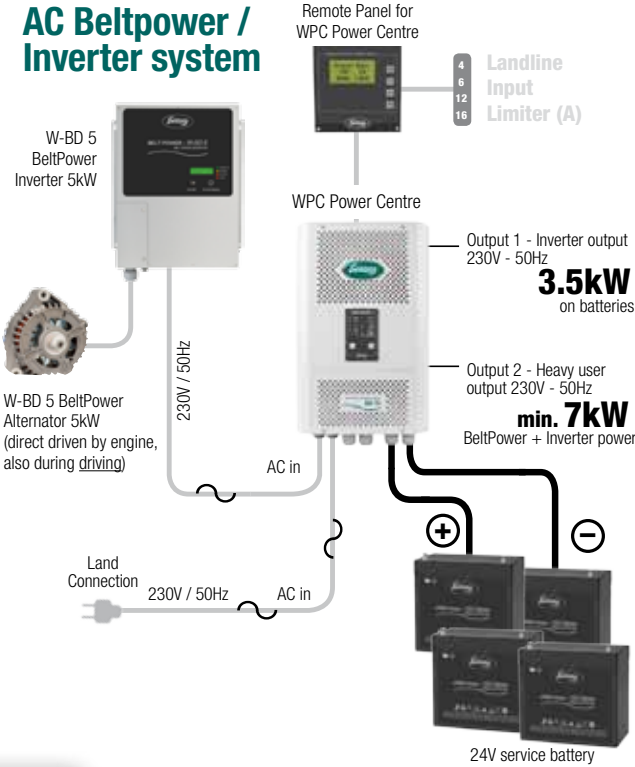
Speed/power diagram W-BD 3.5 (3.5kW)



Speed/power diagram W-BD 5 (5kW)



Combined AC Beltpower / Inverter system



Technical Data

| AC BELTPOWER - 230V GENERATOR SYSTEM - BELT DRIVE | | |
|---|---|----------------------|
| 41301000 | WP-AC BELTPOWER 3.5 3.5kW (at maximum speed), | 32A starting current |
| 41302000 | WP-AC BELTPOWER 5.0 5.0kW (at maximum speed), | 40A starting current |

| REMOTE CONTROL PANEL | |
|----------------------|----------------------|
| 41301030 | Remote control panel |

| ACCESSORIES | | |
|-------------|-----------------------------|------|
| 41301020 | Shielded power supply cable | 5 m |
| 41301021 | Shielded power supply cable | 8 m |
| 41301022 | Shielded power supply cable | 10 m |
| 41301025 | Cable remote control panel | 5 m |
| 41301026 | Cable remote control panel | 10 m |
| 50209133 | Cable remote control panel | 15 m |

| STANDARD PULLEYS AND PULLEYS TO CLIENT SPECIFICATION | | |
|--|--------------------------------|-----------------------|
| 41301050 | Pulley poly 6 groove | Ø 60 mm (recommended) |
| 41301051 | Pulley poly 6 groove | Ø 50 mm |
| 41301052 | Pulley double V groove 12.7 mm | Ø 70 mm |
| 41301053 | Pulley double V groove 10 mm | Ø 60 mm |



WhisperPower can assist, if desired, by selecting the correct pulleys - there is a choice of a double or single belt.

Essential component of the AC and DC Belt Alternator system is the bracket for mounting the alternator to the engine. Mounting bracket kits are available on the market for numerous brands of vans and marine engines.

Power Conversion

Inverters, Battery chargers and Combi's

Excellent components to compose your own system

In chapter 1 we introduced our systems. In this chapter, we define and specify all the PRODUCTS and COMPONENTS which can be selected to put the system of your preference together. POWER ELECTRONICS are the devices needed to make a power system INTELLIGENT, ENERGY efficient and ENVIRONMENTALLY more friendly.

Battery chargers

The main function of a battery charger is to charge the battery when the yacht or vessel is connected to shore power.

- WhisperPower's battery chargers convert any AC voltage or frequency to a smooth 12, 24 or 48 VDC voltage.
- Using WhisperPower's battery chargers ensures a FAST and COMPLETE charge of the battery.
- As a result, the life time of the battery is much longer.



The range

Our range consists of our low power HANDY series, the multiple output SUPREME series and our heavy duty, high output DC POWERCUBE series. Page 52-57

Inverters

WhisperPower's sine wave inverters convert 12 or 24 V battery voltage into high quality house hold electricity. Low power appliances such as vacuum cleaners, computers, chargers for phones and tablets do not require a diesel or gasoline generator but can be operated by an inverter instead. On an inverter, any 230 V/50 Hz appliance can be used at any time, without the need of a running engine. WhisperPower Inverters are often used in combination with DC BeltPower alternators, connected to the main engine. Page 44



Inverter/ charger combinations

When inverters are combined in one box, together with a battery charger, and a shore - to - inverter transfer relay, we use the term Combi's. WhisperPower's Combi are compact, space saving, robust and extremely powerful. Three different versions are available. Our Supreme Combi (light weight, switch mode technology), our WP-Combi (with high surge high efficient toroidal transformers) and our multiple input/ output WPC 'system combi'. Page 48



The secret behind the use of WhisperPower inverters & combi's

Not so long ago, using diesel- or gasoline generators was the only way to obtain 230V/50Hz (120V 60Hz) AC power during navigation and without shore power. With the introduction of sine wave inverters and combi's, generator based power systems have become a lot more efficient.

- Inverters are used to supply AC power during low consumption intervals
- Generators are used during peak consumption hours only
- As a result, fuel saving up to 30% can be achieved
- Drastic reduction of audible noise (inside the yacht and outside) by creating 'silent time' without generator running
- Less running hours = less maintenance
- Inverter with built-in battery charger (Combi) will recharge the battery



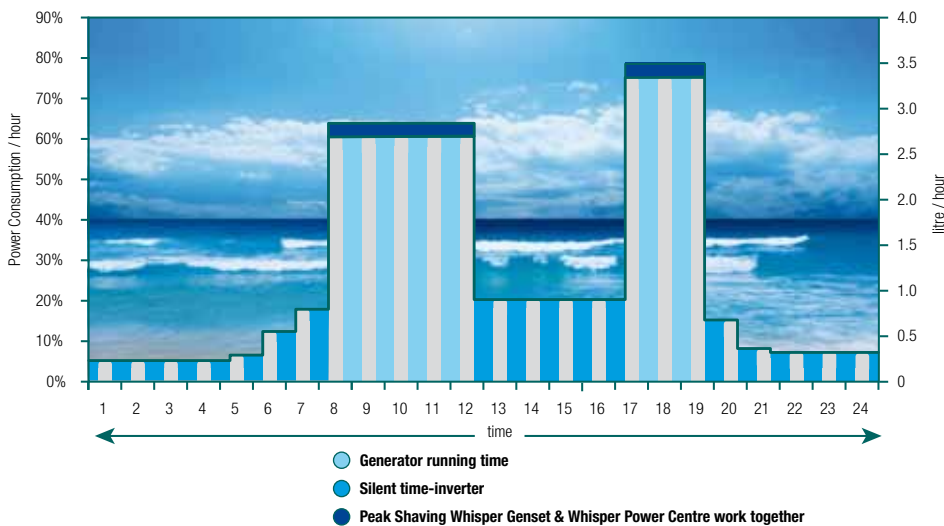
Reduce the size of the generator

The output of a WhisperPower generator and a WPC Power Centre can be bundled to increase the OUTPUT POWER of the diesel generator. This unique feature of our systems is very useful. The size of the generator can be kept to a minimum (approx 20% smaller) as the inverter will boost the additional power from the battery. This so called peak shaving effect increases the efficiency of the system substantially.

24 hours on board - silent time vs generator running

This diagram shows the power consumption pattern during a 24 hour period. The INVERTER operates the various AC appliances during low energy consumption periods during the night and the evening. In the morning and during the day, the WhisperPower generator will provide the AC power while recharging the battery at the same time

Diagram below - application example



Sine wave inverters

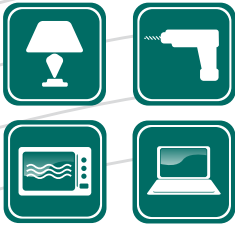
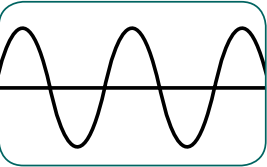
WP-Sine series

AC Power from the battery without generator

The WP-Sine inverter opens up a world of opportunities for yacht owners as it enables the use of practical home appliances, such as coffee machines, microwaves and other kitchen equipment, to be used on board. WhisperPower’s sinewave inverters are completely silent ‘generators’,

providing 230V/ 50Hz (120V/ 60Hz) from a battery. Modern inverters like the WP-Sine range are compact, light weight, efficient and robust. Our WP range is easy to self install and does require any maintenance. These products are an ideal add-on to an existing installation where a battery charger is already installed can be used.

sine wave OUTPUT CURVE



Application examples



Features

- Choice of 400, 1000 Watt or 2000 Watt models
- Can be connected to a 12 (24V) battery
- Plug and play: AC output socket (EU, UK, USA) and DC terminals
- Negligible power loss in conversion from battery to AC power
- USB connection at front to charge telephone etc. (no charger needed)
- Peak power capability of 200%
- Remote on/ off facility, built in LED display on front (DC and AC information)

Benefits

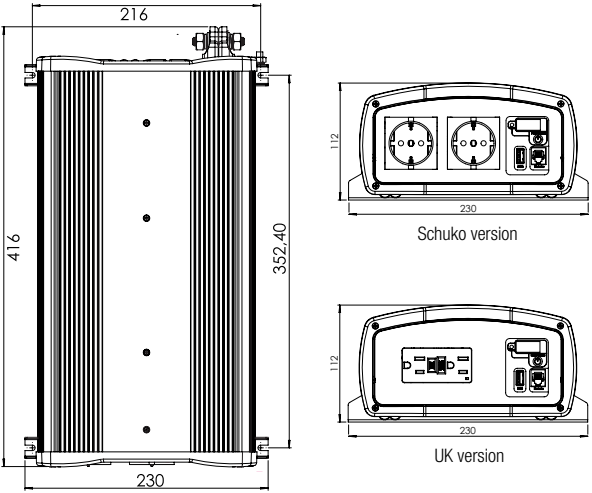
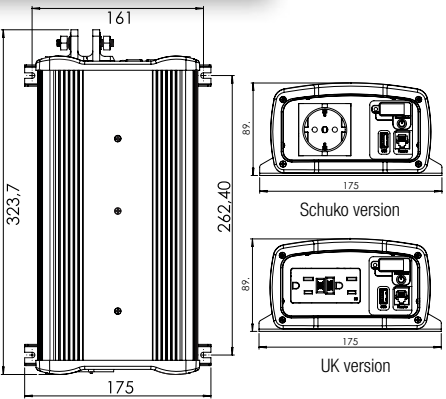
- Pure sine wave output wave form, stabile Hz
- Will operate even sensitive appliances
- Extremely compact and light weight
- Easy to install, at any location
- Silent
- Robust, protected against overheating, overload, short circuit
- Best price/ performance ratio

| Model name Model number | WP-Sine-12/400 61120510 | WP-Sine-12/1000 61121500 | WP-Sine-12/2000 61122500 | WP-Sine-12/1000UK 61121501 | WP-Sine-12/2000UK 61122501 |
|---------------------------------|--|-----------------------------|-----------------------------|-------------------------------|-------------------------------|
| AC output | | | | | |
| Power (Continuous) | 400W | 1000W | 2000W | 1000W | 2000W |
| Power (Peak, 500 mSec) | 800W | 2000W | 4000W | 2000W | 4000W |
| Output voltage | 230V | 230V* | 230V | 230V | 230V |
| Output frequency | 50Hz | 50Hz | 50Hz | 50Hz | 50Hz |
| Total harmonic distortion (THD) | <5% true sine wave | <5% true sine wave | <5% true sine wave | <5% true sine wave | <5% true sine wave |
| DC Input | | | | | |
| Nominal battery voltage | 12V | 12V | 12V | 12V | 12V |
| Operation range | 10.5 - 15.5V | 10.5 - 15.5V | 10.5 - 15.5V | 10.5 - 15.5V | 10.5 - 15.5V |
| Input current | 40A | 94A | 187A | 94A | 187A |
| No load consumption | 0.4A typical | 0.8A typical | 1.6A typical | 0.8A typical | 1.6A typical |
| DC Output | | | | | |
| 5V USB | 750mA | 750mA | 750mA | 750mA | 750mA |
| Display | | | | | |
| LED indicator | No | Yes | Yes | Yes | Yes |
| Digital display | Input Voltage / Current, Output Power | | | | |
| Protections | | | | | |
| Input Undervoltage Warning | 11.2V | 11.2V | 11.2V | 11.2V | 11.2V |
| Input Undervoltage Shutdown | 10.5V | 10.5V | 10.5V | 10.5V | 10.5V |
| Input Undervoltage Recovery | 11.8V | 11.8V | 11.8V | 11.8V | 11.8V |
| Input Overvoltage Shutdown | 15.5V | 15.5V | 15.5V | 15.5V | 15.5V |
| Output Power Warning | Yes | Yes | Yes | Yes | Yes |
| Output Power Shutdown | Yes | Yes | Yes | Yes | Yes |
| Output Short Circuit | Yes | Yes | Yes | Yes | Yes |
| Temperature Warning | Yes | Yes | Yes | Yes | Yes |
| Temperature Shutdown | Yes | Yes | Yes | Yes | Yes |
| | | | | | |
| Conformity | Directive EMC 2004/108/EC Low voltage directive 2006/95/EC | | | | |
| Operating temperature range | -20 - 55°C (derating above 40°C) | | | | |
| Relative humidity in operation | 95% without condensation | | | | |
| Ventilation | Forced cooling | | | | |
| Dimension hxxwxl [mm] | 175x200x89 mm | 185x319x90 mm | 240x420x115 mm | 185x319x90 mm | 240x420x115 mm |
| Weight | 1.7 kg | 2.9 kg | 5.5 kg | 2.9 kg | 5.5 kg |
| Battery connection | M6 studs | M6 studs | M8 studs | M6 studs | M8 studs |
| Ground Lug Connection | M6 studs | M6 studs | M6 studs | M6 studs | M6 studs |
| AC output | 1 x Schuko socket | 1 x Schuko socket | 2 x Schuko sockets | 1 x UK socket | 2 x UK sockets |
| Warranty | 2 years | 2 years | 2 years | 2 years | 2 years |

WP-Sine Accessoires

| Art. Nr. | Item |
|----------|-------------------------------------|
| 61121510 | WP-Sine Remote on/off switch |
| 61121511 | WP-Sine 12/1000 1.5 m battery cable |
| 61121512 | WP-Sine 12/2000 1.5 m battery cable |

*120V/60Hz also available
24VDC models available from Spring 2014





Sine wave inverters AC PowerCube

Instead of an AC generator

The AC PowerCube inverter is the ideal solution to combine compact and silenced diesel generator technology with professional high power inverter technology. This sine wave, switched mode inverter, with a CONTINUOUS power rating of 7 kVA, is designed for NON STOP operation, even under harsh environmental circumstances. In our Hybrid power systems, the AC PowerCube is the prime power source, providing a high quality low distortion 230 V/50 Hz (120 V 60 Hz) to the various on-board AC appliances. The GENVERTER generator supports

the AC load indirectly whilst also charging the battery at the same time. Unlike systems with non-stop running generators, the AC PowerCube system does not waste any energy: the system only takes the power from the battery that is actually needed to operate the AC appliances.



Features

- Powerful switch mode sine wave inverter for non-stop use
- 7kVA continuous output power, 14kVA max
- Can be extended to 2 x 7kVA = 14kVA, 28kVA peak
- Efficiency 93%, limited power loss in DC to AC conversion
- Heavy duty DC connections (2 x battery +, 2 x battery -)
- Heavy duty AC connections, all hard wiring
- WhisperConnect CAN connectivity
- Super silent, no humming - switched mode technology

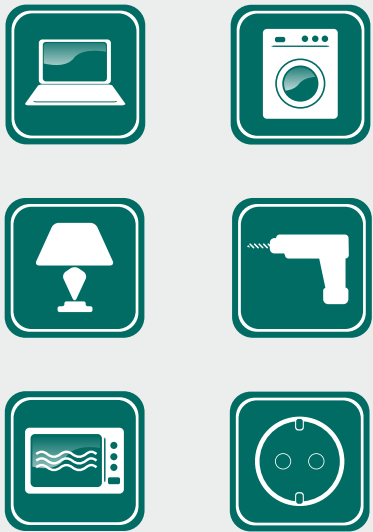
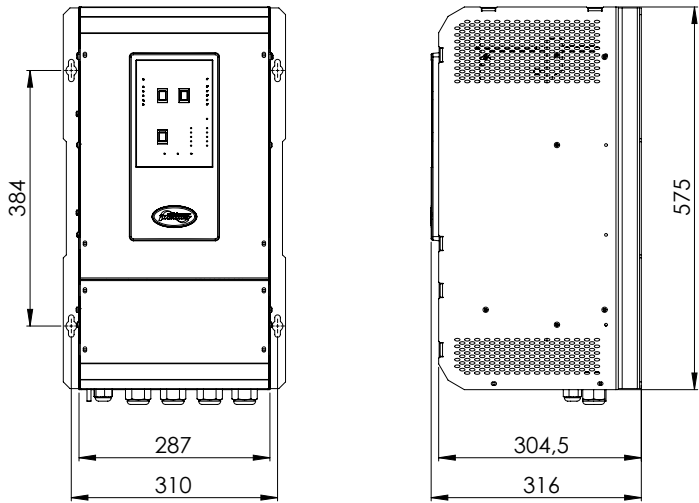
Benefits

- Dedicated design for 'inverter only' function
- On-line power supply, no interruptions, DC shifted from AC
- Best efficiency = limited cooling required
- Perfect match with DC PowerCube and Genverter
- Substantial cost saving due to reduced fuel consumption
- Silent and environmental friendly
- Easy to integrate in WhisperPower (Hybrid power systems).

| Modelname | AC PowerCube 24/7000 |
|---------------------------------------|---|
| Modelnumber | 60203006 |
| General specifications | |
| Output voltage (± 5%) | 230V – 50Hz (± 0.01Hz) |
| Output waveform | Pure sine wave |
| Nom. battery voltage | 24V |
| P30 power at 40 °C, cos phi 1 | 7500W |
| Cont. power at 40 °C, cos phi 1 | 6000W |
| Peak load 20sec | 15000W |
| AC connection | internal |
| Efficiency | 92 % |
| Display/read-out | LED display |
| Min. battery capacity | > 600Ah |
| Dimensions, hwxwd | 575 x 310 x 316 mm |
| Weight | 18 kg |
| Approvals | CE, ABYC compliant |
| Technical specifications | |
| Technology | HF switch mode , 6 times |
| Low battery voltage, switches off at | 19V, ± 0.5V |
| Low battery voltage, switches on at | 22V, ± 0.5V |
| High battery voltage, switches off at | 32V, ± 0.5V |
| High battery voltage, switches on at | 30V, ± 0.5V |
| Max. ripple on DC (battery) | 5% RMS |
| Input current (nominal load) | 375A |
| No-load power consumption (ON mode) | >550mA – 12W |
| Min. DC fuse (slow blow) | 2x 250A |
| Min. cable size | 2x 7 mm² |
| Harmonic distortion typical | < 5% |
| Cos phi | all power factors allowed |
| Temperature range (ambient temp.) | -25°C to 80°C, derating > 40°Ca -13 to 176°F |
| Protection degree | IP23 |
| Cooling | natural/forced |
| Sound level | 48dBA at 1 mtr |
| Protections | over heating, over load, short circuit, high battery, low battery |

Accessories

- DC battery cables- pre installed, max 2 metres
- Remote panel analogue /on- off / DC-AC information
- Remote panel digital Power System Control Panel
- WhisperSwitch / transfer switch Shore-Generator / Inverter



Inverter/ charger combinations WP-Combi

Perfect combination of two key functions

Space on board of yachts is always an issue. The need and desire to install compact systems is something we have already considered and incorporated in to our sine wave inverter / charger product range providing a solution for every system and every budget.

For small systems we offer the Supreme Combi, available for 1 or 2 kVA output power rating. (Orange label). Our WhisperPower Combi (WP-Combi) is a straight forward robust, toroidal transformer based unit, available

Features

- High continuous power rating
- Extreme high peak power to start up inductive loads like airco's
- Powerful 3-stage battery charger (1 x main, 1 x slave)
- Low frequency technology = highest reliability
- Compact enclosure, heavy duty hard - wiring AC and DC connections
- Models for 12, 24 and 48VDC
- Power safe mode
- Remote control panel and temperature sensor for batteries standard

for 2 or 3 kVA power rating. The WP-Combi is one of the most powerful Combi's available on the market, ideal for yachts between 20 and 40 ft. Our WPC 'system' combi offers additional features such as parallel-to-generator mode, shore power support mode and parallel-to-inverter mode. (see page 50).



Benefits

- All-in-one, space saving, labor saving
- Most powerful inverter
- Fast recharge of the battery
- Charge current control in case of limited AC power
- High efficient, limited ventilation required
- Superior protection against any misuse or events

| Model | WP- COMBI 12/2000-80 Art. nr. 61112280 | WP- COMBI 24/3000-60 Art. nr. 61124360 | WP- COMBI 48/3000-30 Art. nr. 61148330 |
|--|--|--|--|
| Inverter | True Sine wave | | |
| Nominal battery voltage | 12VDC | 24VDC | 48VDC |
| Input voltage range | 10..16VDC | 20..32VDC | 40..64VDC |
| Power @ 25°C | 2000W | 3000W | 3000W |
| Continuous Power @ 40°C | 1800W | 2600W | 2600W |
| Power 1 min. @ 25°C | 2500W | 3300W | 3300W |
| Power 20 sec. @ 25°C | 3000W | 4500W | 4500W |
| Maximum load | fully protected up to short circuit | | |
| Maximum a-symmetric load | 1000W | 1500W | 2000W |
| Load detection (standby) | >15W | >20W | >20W |
| Power factor | up to 1 | up to 1 | up to 1 |
| Efficiency (@ full load) | 88% | 92% | 92% |
| Zero load power | <20W | <25W | <25W |
| Standby power (load search) | <5W | <5W | <5W |
| Output voltage | 230VAC +/- 3% | | |
| Output frequency | 50Hz +/- 0.5% | | |
| Harmonic distortion (voltage) | THD<3% THD<3% THD<3% | | |
| Overload and short-circuit protection | auto disconnect after 3 start attempts | | |
| Overheat protection | Yes (The WP-Combi has to be restarted manually) | | |
| Charge characteristic | IUU Multi step | | |
| Battery type | Bulk voltage (12V/24V/48V) | ABS voltage (12V/24V/48V) | Float voltage (12V/24V/48V) |
| Gel | 14.40V / 28.80V / 57.60V | 14.25V / 28.50V / 57.00V | 13.80V / 27.60V / 55.20V |
| AGM | 14.40V / 28.80V / 57.60V | 14.25V / 28.50V / 57.00V | 13.80V / 27.60V / 55.20V |
| Open lead acid | 14.25V / 28.50V / 57.00V | 14.25V / 28.50V / 57.00V | 13.25V / 26.50V / 53.00V |
| Traction | 14.60V / 29.20V / 58.40V | 14.45V / 28.90V / 57.80V | 13.25V / 26.50V / 53.00V |
| Equalizing voltage (for 30 minutes) | 15.5 VDC | 31.0 VDC | 62.0 VDC |
| Maximum charging current | Max. 80A (adjustable) | Max. 60 A (adjustable) | Max. 30 A (adjustable) |
| Temperature compensation | -30mV/°C (by external temperature sensor) | -60mV/°C (by external temperature sensor) | -120mV/°C (by external temperature sensor) |
| Slave charger | 12V/3A 24V/3A No | | |
| Power factor correction | yes | yes | yes |
| Operating modes (front accessible) | On / Off / Charger only | | |
| Local user interface | State of load, state of charge, inverter on/off, charger only mode, AC present, current control, charger settings (capacity, battery type, low voltage detection settings, operation mode) | | |
| Remote panel (RJ12) | State of load, state of charge, inverter on/off, AC present | | |
| Input voltage range | 194..250Vac (UPS mode) | 170..265Vac (GEN mode) | |
| Input frequency range | 45..65Hz (UPS mode) | 40..70Hz (GEN mode) | |
| Input current max | 30A (protected by internal circuit breaker) | | |
| Charging input current (max charging current @ 230Vac) | 4.5A (adjustable with the knob on the front) | 6.6A (adjustable with the knob on the front) | 8.4A (adjustable with the knob on the front) |
| Transfer time | 10..15 ms (UPS mode) | 2sec (GEN mode) | |
| Weight | 23.5 kg | 23.5 kg | 23.5 kg |
| Dimensions | 458 x 200 x 190 mm | | |
| Protection degree | IP21 | | |
| Color | RAL 9006 (White aluminum) and RAL 7016 (Anthracite grey) | | |
| Conformity | EN60950-1, EN55022, CE marking | | |
| Operating temperature range | -10..40°C (derating from 40 to 65°C) | | |
| Storage temperature | -40..70°C | | |
| Relative humidity (operational) | 0%-95%, non-condensing | | |
| Ventilation | Forced air | | |
| Warranty | 1 year | | |
| Battery connector | Two M6 screws | | |
| AC connectors | M4 screw terminal blocks | | |

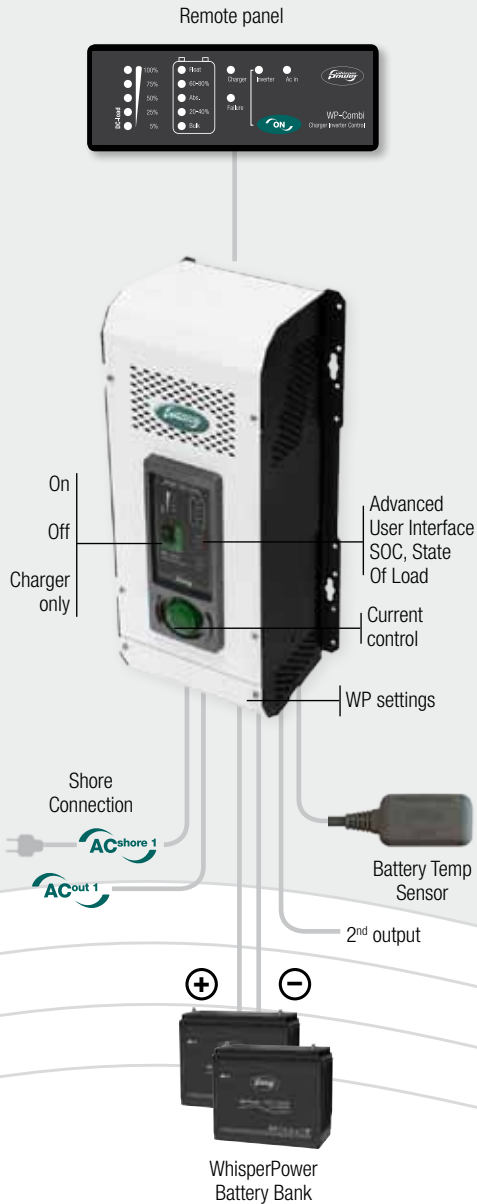
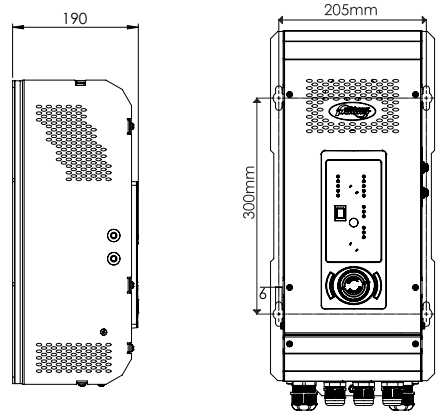


Table top or wall mounting



WP-Combi Accessoires

| Art. Nr. | Item |
|----------|-----------------------|
| 61112050 | Remote Panel WP-Combi |

System inverter /chargers WPC series

The powerful heart of the system

Our WhisperPowerCentre is the ultimate inverter/ battery charger for power systems with multi functional requirements. This is one of the most efficient inverters available on the market (94%) and also the most powerful (300 % peak power capability). The WPC can be linked to any SQ, SC or Genverter Basic generator by utilizing the generator input of the WPC. AC outputs can be combined in parallel, resulting in an increase in the generator output or shore power connection with the power rating of the inverter!



Features

- Double input/ output, plug and play installation
- 50A/ 230 V built-in transfer relay
- Sine wave inverter with 300% peakpower
- Powerful multi stage, programmable battery charger, 2 outputs
- Standard supplied with battery cables (1.50 mtrs, other size at request)
- Current control (remote)
- Seamless transfer/ UPS mode
- Extended remote control - RCC and PSCP
- Interface kit from RS 232 to CAN –
- Interface kit from RS 232 to tablet/ I phone



Benefits

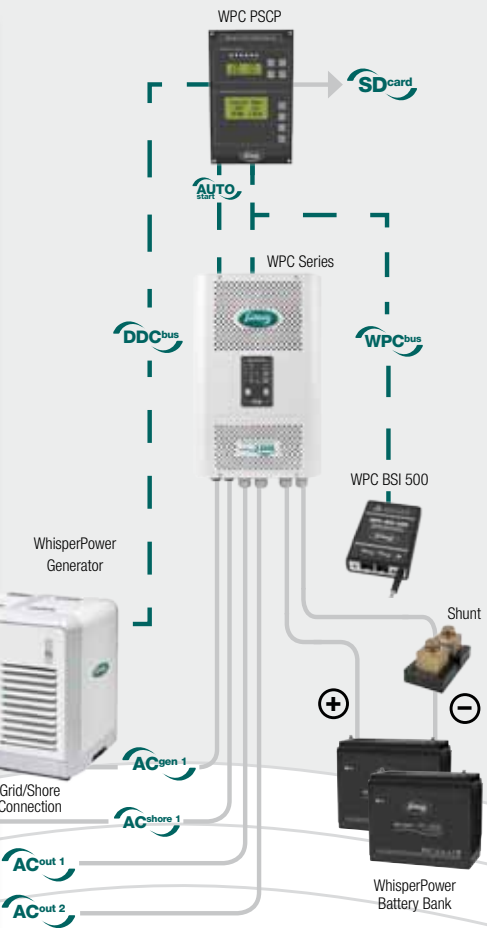
- Upgrade of Generator output power (peak shaving)
- Main AC power source for the on board system
- Automatic battery charger included
- Parallel to shore and parallel to WhisperPower generator mode
- Parallel/ stacking up to 9 WPC's, no limitations
- Heavy duty build-in transfer relay, all-in-one
- Easy plug and play installation, DC cables pre-connected



2 -20kW Power Rating - in parallel configuration

| Model name | WPC-2000-12* | WPC-3500-24* | WPC-4000-48* |
|---|--|---------------------|---------------|
| Art. Nr. | 60201001 | 60201002 | 60201003 |
| Technical specifications | | | |
| Inverter | | | |
| Nominal battery voltage | 12 VDC | 24 VDC | 48 VDC |
| Input voltage range | 9.5 - 17 VDC | 19 - 34 VDC | 38 - 68 VDC |
| Continuous power @ 25°C | 2000VA | 3000VA | 3500VA |
| Power 30 min. @ 25°C | 2000VA | 3500VA | 4000VA |
| Power 5 sec. @ 25°C | 6000VA | 9000VA | 10500VA |
| Maximum load | Up to short-circuit (fully protected) | | |
| Maximum a-symmetric load | Up to continuous power | | |
| Load detection (stand-by) | 2 to 25W (AES) Automatic Enable System | | |
| Power factor | 0.1-1 | | |
| Maximum efficiency | 93% | 94% | 96% |
| Consumption OFF/Stand-by/ON | 1.4W/1.6W/9W | 1.4W/1.6W/12W | 1.8W/2.1W/14W |
| Output voltage | Pure sine wave 230 VAC (+/- 2%) | | |
| Output frequency | 50Hz / 60Hz (1) +/- 0.05% (crystal controlled) | | |
| Harmonic distortion (Voltage) | <2% THD | | |
| Overload and short-circuit protection | Automatic disconnection with 3 time restart attempt | | |
| Overheat protection | Warning before shut-off with automatic restart | | |
| | | | |
| Battery charger | | | |
| Charge Characteristic | 6-step Bulk-Absorption-Floating-Equalization-reduced floating-periodic absorption. Number of steps, thresholds, return amps completely adjustable. | | |
| Maximum charging current | 100A | 90A | 50A |
| Temperature compensation | With Whisper temperature sensor WPC-BTS | | |
| Power Factor Correction (PFC) | EN 61000-3-2 | | |
| | | | |
| General data | | | |
| Input voltage range | 150 to 250 VAC | | |
| Input frequency | 45 to 65 Hz | | |
| Input current max. (transfer relay) / Output current max. | 30A / 50A | 30A / 45A 30A / 47A | |
| Transfer time | <15ms | | |
| Weight | 25 kg | 28 kg | 28 kg |
| Dimension hxxxd [mm] | 510 x 330 x 150 | | |
| Protection degree | IP21 | | |
| Color | RAL 9003 | | |
| Conformity | Directive EMC 2004/108/EC : EN 61000-6-1, EN 61000-6-3, EN 55014, EN 55022, EN 61000-3-2, 62040-2. Low voltage directive 2006/95/EC : EN 62040-1-1, EN 50091-2, EN 60950-1 | | |
| Operating temperature range | -20...+40°C, derating to 55°C | | |
| Relative humidity in operation | 95% without condensation | | |
| Ventilation | Forced from 45°C | | |
| Acoustic level | <40dB / <45dB (without/with ventilation) | | |
| Warranty | 2 years | | |

*) Designed to operate with Whisper SC & SQ diesel generators. 'Powerbox' delivered as part of the Genverter 7i



For dimensions
& drawing see page 27

WPC-Accessoires

| Art. Nr. | Item |
|----------|--------------------------------------|
| 60201150 | WPC-PSCP Power System Control Panel |
| 60201080 | WPC-RCC Remote Combi Control |
| 60201082 | WPC-BSI 500 Battery Status Interface |
| 60201084 | WPC-RS232 Serial Interface |
| 60201086 | WPC-BTS Battery Temperature Sensor |

Battery chargers Handy series



Portable battery charger for small batteries

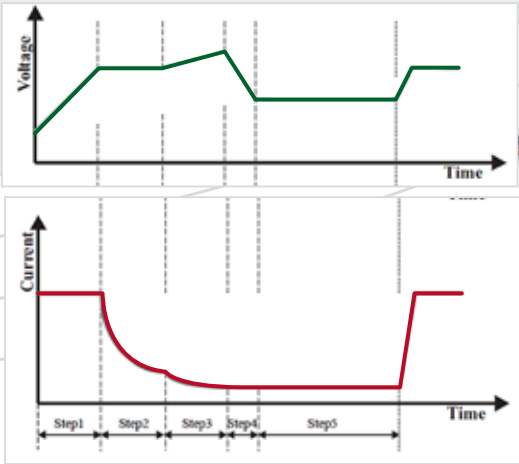
WhisperPower's HANDY battery chargers are ideal for charging small batteries of any kind. From small sealed batteries for waterscooters up to larger open lead acid starter batteries as part of more extended electrical systems, the fully automatic Handy charge the batteries QUICKLY and COMPLETELY, ensuring longer battery life and increased reliability.

The portable HANDY chargers are supplied with brackets for fixed mounting and all necessary parts to connect the charger to the battery and the AC socket. Three different models are available: a 2 A, 7 A and a 15 A version, all of them for 12 VDC.



| Model: Art. Nr. Europe Art. Nr. United Kingdom | WBC-Handy 20* 61112002 61112003 | WBC-Handy 70 61112007 61112008 | WBC-Handy 150 61112015 61112016 |
|--|---------------------------------------|--------------------------------------|---------------------------------------|
| Technical specifications | | | |
| Input voltage | 220-240VAC ±10% | 220-240VAC ±10% | 220-240VAC ±15% |
| Input current | 0,3A | 0.9A | 1.5A |
| Back current | ≤1mA | ≤1mA | ≤1mA |
| Charging Voltage | 13,7 - 15VDC | 13,7 - 15VDC | 13,7 - 15VDC |
| Charging Voltage Supply | 13,7VDC | 13,7VDC | 13,7VDC |
| Charging current | Max. 2A | Max. 7A | Max. 15A |
| Ripple voltage | Max. 70 mV | Max. 70 mV | Max. 70 mV |
| Ambient temperature | -25..+50°C | -40..+50°C | -40..+50°C |
| Cooling | Convection | Convection | Convection |
| Charge Characteristics | 5 step IUUU + pulse | 5 step IUUU + pulse | 5 step IUUU + pulse |
| Forced Float | 13.7 VDC (Maintenance charge) | 13.7 VDC (Maintenance charge) | 13.7 VDC (Maintenance charge) |
| Lead-acid battery types | AGM/GEL, WET batteries | AGM/GEL, WET batteries | AGM/GEL, WET batteries |
| Battery capacity | 1 - 40Ah | 1 - 150Ah (Max. 180Ah) | 20 - 300Ah (Max. 360 h) |
| Cabling | Battery cable 1300 mm | Battery cable 1500 mm | Battery cable 1500 mm |
| | Power cable 1000 mm | Power cable 1400 mm | Power cable 1400 mm |
| Europe plug | IEC60884 | IEC60884 | IEC60884 |
| United Kingdom plug | BS1363 | BS1363 | BS1363 |
| Dimensions (LxWxH) | 157 x 33 x 34 mm | 225 x 50 x 50 mm | 325 x 65 x 60 mm |
| International Protection grade | IP44 | IP54 | IP54 |
| Weight | 0.35 Kg | 0.5 Kg | 0.8 Kg |

* Not with integrated flashlight



Multi stage charge algorithm shown in a graph



| Art. Nr. | Item |
|----------|---------------------------------------|
| 61112901 | WBC-HANDY fixed installation kit |
| 61112911 | WBC-HANDY battery fast connect clamps |

- Open lead acid ✓
- AGM ✓
- GEL ✓



Features

- Advanced 5-step charge method
- Fully automatic, suitable for GEL, AGM or open lead acid batteries
- Easy to operate battery selector switch
- Standard fitted with temperature sensor for safe charging
- Clear battery status indicators
- Built-in flash light standard for 7A and 15A models
- Complete plug and play kit, ready to use.

Benefits

- Fast and complete battery charging
- Handy charger always can stay in connection with the battery
- Fully automatic, can stay connected to the AC power
- Extends battery life time substantially
- Safe polypropylene enclosure, for fixed or portable use
- Compact and easy to install
- Best price/ performance

Examples of use

- Charging 12V starter battery
- Charging 12V main battery
- Charging 12V drive battery (navigation)
- Charging 12V back-up/ emergency battery
- Speed boats
- Fishing boats
- Day cruisers
- Canoes
- Waterscooters

Battery chargers Supreme series



Perfect solution for charging multiple batteries

WhisperPower's Supreme battery chargers are designed for permanent installation on pleasure yachts or small professional boats. They are powerful battery chargers, suitable to charge 3 individual batteries at the same time. The Supreme charger can be easily programmed to charge GEL, AGM or open lead-acid batteries. The charger will accept any incoming voltage, from 90 - 265VAC, (50 or 60Hz) so the system will work worldwide.



Features

- Designed to charge 3 separate batteries at the same time
- Also suitable to charge 1 or 2 batteries
- Battery sizes can be different
- Programmable for GEL, AGM, open lead-acid and Lithium-Ion batteries
- As standard supplied with temperature sensor
- As a consequence, no risk of gassing batteries
- Autoranging input, can be plugged in anywhere in the world
- Will work with small gasoline or diesel generators
- Fully CE / ABYC compliant

Benefits

- Fast recharge, even at low AC incoming voltage
- Easy access to DC connection, AC cord delivered as standard
- Free-of-charge temperature sensor
- Quick install
- Silent operation - no humming of transformers
- Longest battery life time
- Best price performance ratio

Connection compartment

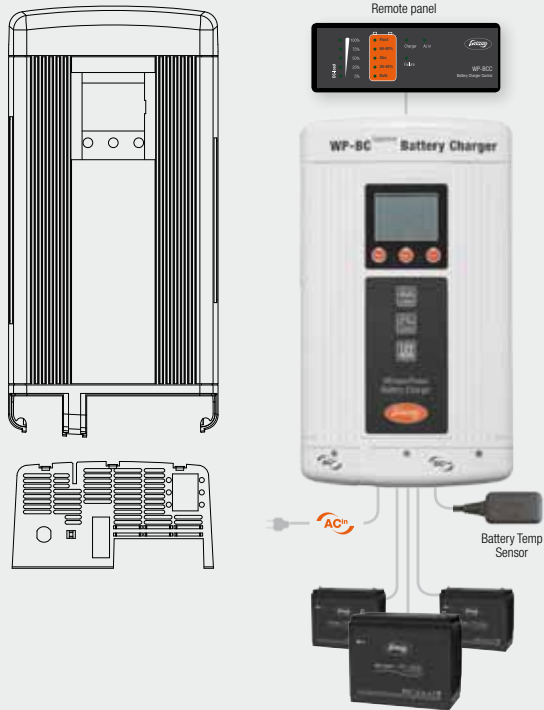


| Model | 12V/20A | 12V/40A | 12V/60A | 24V/30A |
|---|--|-----------|--------------|-----------|
| Article no. | 61112302 | 61112304 | 61112306 | 61124303 |
| Charger Output: | | | | |
| Output Current (Maximum) | 20A | 40A | 60A | 30A |
| Output Voltage Range: | | | | |
| Charge (Bulk) | 14.2 - 15.5V | | 28.4 - 31V | |
| Float | 13.4 - 13.8V | | 26.8 - 27.6V | |
| Equalize | 16.0V | | 32.0V | |
| | Three stages (Bulk/Absorption/Float) | | | |
| Charging Control | Two stages (Bulk/Absorption) | | | |
| | Constant Power Supply (Program setting) | | | |
| DC Output Bank | Three | | | |
| Selectable Battery Type | Gel, AGM, Flooded, Lithium, Program | | | |
| Parasitic Current | < 2 mA | | | |
| Charger Input: | | | | |
| AC Input Voltage (Nominal) | 100, 120, 220, 230, 240VAC | | | |
| AC Input Operating Range | 90 - 265VAC | | | |
| AC Input Frequency Range | 47 - 63Hz | | | |
| Power Consumption (Full Load) | 350W | 700W | 1050W | 1050W |
| Power Factor Correction | Yes | | | |
| Charger Efficiency | > 82% | | | |
| Protection and Features: | | | | |
| Reverse Battery | Yes, unit shutdown | | | |
| Over Charge | Yes, unit shutdown | | | |
| Over heating | Yes, unit de-rated and shutdown | | | |
| Output Short Circuit | Yes, unit shutdown | | | |
| DC Fuse | 2*15A, 32V | 2*30A,32V | 3*30A,32V | 2*20A,32V |
| Cooling | Force air ventilation | | | |
| Temperature Setting | Hot, Normal, Cold (no sensor connected) | | | |
| Battery Temperature Sensor Port | RJ12 (optional battery temp. sensor use) | | | |
| Digital Display Port | RJ12 (optional display panel use) | | | |
| Display: | | | | |
| LCD Display (with back lighting) | Charging status, Battery Voltage | | | |
| Warning and Fault Code | A01-02, E01-09 | | | |
| AC Input and DC Output Connection: | | | | |
| AC Input Connection | Hardwire or AC Cord | | | |
| DC Output Connection | Heavy Duty Studs (3 banks) | | | |
| DC Output Ground | Single Heavy Duty Common Ground Stud | | | |
| Environmental and Operating Temperature: | | | | |
| Storage Range | -40° to 70°C (-40° to 158°F) | | | |
| Operating Range | -20° to 60°C (-4° to 140°F) | | | |
| Humidity | 5-95%, RH non-condensing | | | |
| Ingress Protection | IP32 | | | |
| Based Unit Weight and Dimensions: | | | | |
| WP-BC 12/20-3 | 5.3 lb., 11.6 x 8.1 x 3.4 inches (2.4 Kg, 295 x 206 x 86 mm) | | | |
| WP-BC 12/40-3 | 5.7 lb., 11.6 x 8.1 x 3.4 inches (2.6 Kg, 295 x 206 x 86 mm) | | | |
| WP-BC 12/60-3 | 8.8 lb., 14 x 8.1 x 3.8 inches (4.0 Kg, 356 x 206 x 99mm) | | | |
| WP-BC 24/30-3 | 8.8 lb., 14 x 8.1 x 3.8 inches (4.0 Kg, 356 x 206 x 99mm) | | | |
| Regulatory Compliance: | | | | |
| Standards/Safety (North America) | Approved to UL1236 including the marine supplement UL1564 CSA C22.2 107.2-01 | | | |
| Standards/Safety (European Union) | CE marked for the low voltage directive 2006-95-EC Complying with EN60335-2-29 battery chargers Approved to IEC60529:2001, IP32 ingress protection level | | | |
| Standards/EMC (North America) | Class B according to FCC part15B and ANSI C63.4 | | | |
| Standards/EMC (European Union) | CE marked for the EMC directive 2004-108-EC Complying with EN55014-1, EN55014-2, EN61000-3-2 and EN61000-3-3 (as equivalent IEC standards series) | | | |

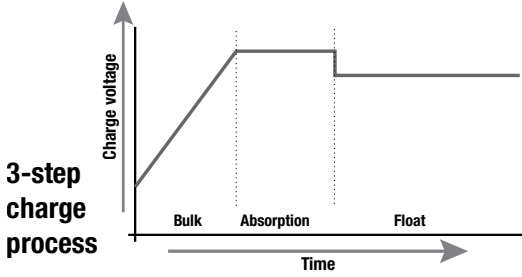
| Art. Nr. | Item |
|----------|--------------------------------|
| 61112301 | WP-BCC Battery Charger Control |



Optional - available from 1 February on



Battery Temp Sensor standard



| Battery Temperature | Battery Charging Voltage Adjustment from 25°C normal setting | |
|---------------------|--|--------------|
| | Flooded and GEL type | AGM type |
| < 25°C | + 0.027V /°C | + 0.021V /°C |
| 25°C | 0V | 0V |
| > 25°C | - 0.027V /°C | - 0.021V /°C |

Supreme's 3 stage charge curve (IUoU)
Supreme charger's TEMPERATURE COMPENSATION
– for safe battery charging and extended battery life



Battery chargers

DC PowerCube series

High power ‘system’ battery charger/ power supply

The DC PowerCube is designed for larger, more extended power systems with large battery capacity and substantial DC consumption. The DC PowerCube converts the incoming shore power (or generator power) to the on board DC power, needed to operate all lights, pumps and other DC consumers. The DC PowerCube can deliver up to 3.5kW electrical power, sufficient to operate all devices on board of, for example, a 50 or 60 ft yacht. The DC PowerCube can even be used as a power supply, without batteries connected, as the output voltage is smooth and ripple-free.

Features

- DC power rating from 40A - 120A
- Shore power AC input selectable from 4 to 16 Ampere
- Max power 3.5kW (24 or 48 VDC systems) at shore power mode
- Max power 4.3kW at Genverter -diesel generator mode
- Programmable: load on Genverter (and rpm selection as a consequence)
- 2nd 24VDC slave output (3-step)
- 12V 20Amp output, 3-step, for 12V batteries
- At shore power: global input, from 90 - 260VAC, 50/60Hz (autoranging)
- At shore power: 3 x 208VAC/ three phase input
- WhisperConnect CAN bus connection

Dual functionality

WhisperPower’s DC PowerCube can also be connected to the Genverter Diesel generator full stop. When shore power amperage is not powerful enough, the Genverter will produce more power via the DC Powercube. In Genverter mode, the DC PowerCube is capable operate to the complete DC and AC system via the AC PowerCube or WPC inverters.



Benefits

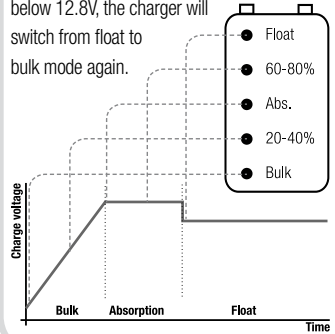
- Powerful charger/ power supply, supporting the entire on-board DC system
- Ultra short re-charge time, shortens generator running considerably
- Multiple output: 24VDC main, 24VDC slave. 12V for one or more batteries
- Programmable by settings or laptop: GEL, AGM, traction, open lead acid, Lithium-Ion
- Smooth DC output, no ripple, thanks to switch mode technology
- Connectable to any shore power amperage or voltage
- Dual function: silent diesel generation via Genverter (main power source or night mode)

| Model name | WP-DC PowerCube 24/150 | WP-DC PowerCube 48/80 |
|--|--|----------------------------------|
| Model number / Product type | 60202002 / Battery charger | 60202003 / Battery charger |
| General specifications | | |
| Nominal battery voltage | 24 VDC* | 48 VDC |
| Output current | 0-150A (short circuit protected) | 0-100A (short circuit protected) |
| Output voltage | 26.5/28.5 VDC | 43.0/57.0 VDC |
| Recommended battery capacity: | 300 to 1500 Ah | 200 to 1000 Ah |
| Charge characteristic | 3+ step charge characteristic | |
| Slave charger | 12V-20A (3+ step charge characteristic) short circuit protected | |
| Input specifications | | |
| Grid input voltage range | 90-264VAC (45-65Hz), (3 wire connection) | |
| Grid input current | Adjustable, from 2A to 16A | |
| Power factor (cos phi) | > 0.9 | |
| PM generator input range | 80-300VAC (30-500Hz), (3 wire connection) | |
| PM input current | Adjustable, from 2A to 14.5A | |
| Power factor (cos phi) | > 0.85 | |
| Power Factor Correction (PFC) | EN 61000-3-2 | |
| Technical specifications | | |
| Temperature compensation | -30 mV/°C | -60 mV/°C |
| Supported battery types | Open and sealed lead acid: Gel / Traction / AGM / Spiral and Lithium-ion | |
| Battery leakage current | <5mA per battery | |
| Charge voltages | Bulk, Absorption, Float | |
| Charge voltage AGM / GEL at 25°C | 28.80 VDC, 28.50 VDC, 27.20 VDC | 57.60 VDC, 57.00 VDC, 54.40 VDC |
| Charge voltage Traction at 25°C | 29.20 VDC, 28.90 VDC, 26.50 VDC | 58.40 VDC, 57.80 VDC, 53.00 VDC |
| Charge voltage Open lead acid at 25°C | 28.50 VDC, 28.50 VDC, 26.50 VDC | 57.00 VDC, 57.00 VDC, 53.00 VDC |
| Charge voltage Lithium-Ion at 25°C | 28.80 VDC, 28.60 VDC, 28.00 VDC | 57.60 VDC, 57.20 VDC, 56.00 VDC |
| Return current from absorption to float | 6% of I _{max} | 6% of I _{max} |
| Power Cube charging status on/off | Digital output (relay, two-way contact) | |
| Failure condition present | Digital output (relay, two-way contact) | |
| DC PowerCube disabled | Digital input (potential free input, closed is disabled) | |
| PM input disabled | Digital input (potential free input, closed is disabled) | |
| Conformity | Directive EMC 2004/108/EC : EN 61000-6-1, EN 61000-6-3, EN 55014, EN 55022, EN 61000-3-2, 62040-2 Low voltage directive 2006/95/EC: EN 62040-1-1, EN 50091-2, EN 60950-1 | |
| Protections | | |
| Over heating protection | Yes, derating above 40°C, shutdown at high temperatures. (with automatic restart after cooling down) | |
| Overvoltage protection (manual restart needed) | 36 VDC +/- 0.5 VDC | 68 VDC +/- 0.5 VDC |
| Ingress Protection index | IP21 | |
| Mechanical specifications | | |
| Main battery connection | 2 x M10 studs | |
| Slave battery connection | 1 x M5 stud | |
| Earth grounding lug | 1 x M6 stud | |
| AC grid input | 3 x M3 screw terminal block | |
| PM grid input | 3 x M3 screw terminal block | |
| Remote control panel | RJ12 | |
| Battery temperature sensor | RJ12 | |
| Whisper Connect CANbus | RJ45 | |
| Voltage sense | Phoenix MSTB 2.5/2-ST-5.08 | |
| Digital outputs | 6 x fastons (6.3x0.8) | |
| Digital inputs | 4 x fastons (6.3x0.8) | |
| Dimension hxxwl [mm] | 575x221x316 | |
| Operating temperature range | -20 - 55°C (derating above 40°C) | |
| Relative humidity in operation | up to 95% without condensation | |
| Ventilation | Combined cooling (convection and forced (variable speed)) | |
| Weight | 26 kg | 26 kg |
| Acoustic level | <52dB | |
| Warranty | 2 years | |
| Accessories | Battery temperature sensor and remote control panel | |



Remote panel standard supply with DC PowerCube

The DC PowerCube is fitted with the multi stage charging algorithm (UoUo), with this algorithm the batteries are charged in a fast and safe way, resulting in a longer lifetime of the batteries. The charging states are represented by the different indication lights in the charging status bar on the DC PowerCube. When the DC PowerCube is charging, the bulk light will always illuminate. The 20-40% indicator will illuminate when the charging voltage is higher than 13.25V. When the charger reaches the bulk voltage 14.25V (depending on the battery type), the charger will go into the absorption mode. When the charging current drops below the return amps (6% of the Ah setting), the 60-80% indicator will illuminate. After 15 minutes, the charger will go into the float mode. When the battery drops below 12.8V, the charger will switch from float to bulk mode again.



- A DC Connection to main battery
- B Second charger output
- C Programmings set points
- D Shore Power input
- E Genverter input
- F Glands for cables
- G Vario-fans

WhisperPower instrumentation

Essential monitoring and control

Most of the WhisperPower system components and products are fitted with read-out information showing the status of the device. WhisperPower Instrumentation connects all essential system devices to one specific part of the boat, for example the dash board or navigation centre.

We offer various monitoring devices, from simple on/off buttons and LED's to extended Touch screen monitoring.

Example of variations

- Analogue remote LED panels for chargers, WP-Combi's & inverters
- Analogue LCD panels for WPC, Genverter, SC/SQ
- Digital panels connectable to NMEA 2000
- WhisperPower App for local WiFi and control of system by tablet or I phone



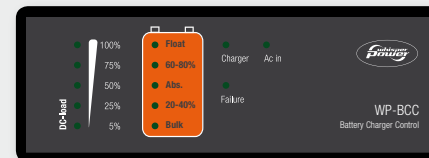
Bridge of 55 Ft motoryacht Independence



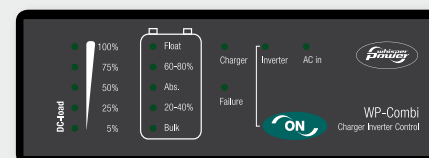
At left: Our WhisperPower Touch panel offering on-line system values

At right: Effective LED read-out panels for our DC charger, AC inverters, combined with our WBM battery monitor.

Monitoring delivery program



WP-Supreme battery charger panel • Art. nr. 61112301



WP-Combi remote panel Art. nr. 61110050



WPC-RCC remote panel/ with battery consumption meter Art. nr. 60201080



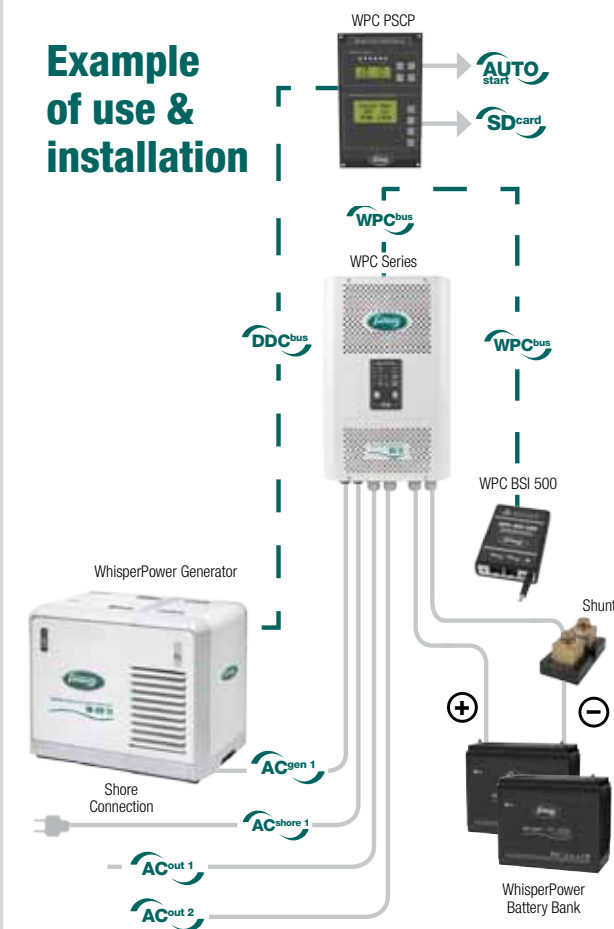
PSCP Combined WPC/ Generator control panel • Art. nr. 60201150
One of our most comprehensive monitoring devices is our Power System Support Panel, combining both our SQ/SC/ GV diesel generators as our WPC Power Centre (see pag 50 for more information)



WhisperPower App
Art. nr. 60116050

WhisperPower generators and WPC's can also be monitored and controlled from a tablet or I phone: we offer a black box computer with WIFI plus connection kit, allowing to use these. We can also prepare these systems for remote read-out.

Example of use & installation



BSI500



WPC shunt 500A/50mV



WPC shunt 1200A/50mV

Power Storage

Your reliable 'energy tank'

In our day to day life, batteries are vital: mobile telephones, laptops, tablets, navigation systems, just name it, all of them rely on the electrical battery power. On boats, the battery is the essential power source for all key functions, such as starting the engines, powering navigation and communication equipment and operating navigation and reading lights. In a WhisperPower system, the battery also has a central role. It is the central 'energy tank', also providing power to the inverter or combined inverter/ genverter/ generator system, in case of high power demand. The selection of the correct battery capacity and technology determines the functionality, safety and durability of such systems. To select the right battery for your needs, we are on hand to help. More information is available below and on the following pages, we explain the differences between the products available.

Sealed maintenance free batteries

We do not recommend using open lead-acid batteries. They are not as safe as sealed, maintenance free batteries, due to the risk of gas formation and the need to refill the battery from time to time with distilled water. These open lead acid batteries require extended ventilation. AGM (Absorbed Glass Matt) batteries can be acquired at almost the same cost and are much more user friendly. GEL batteries are, in general, 30% more expensive due to the technology applied, which offers an even longer life cycle.

AGM Batteries (go to page 62)

- Most cost effective maintenance free, sealed battery
- Designed to power extended electrical systems (cyclic use)
- Can be used for starting engines as well
- Ideal power source for thrusters, winches and other intermittent loads
- Available from 55Ah up to 260Ah, 12 volt (in series 24VDC)

GEL Batteries - semi traction - (go to page 64)

- Heavy duty, long life, deep cycle battery
- Designed for daily charge/ discharge cycles
- Can be used for engine starting as well
- Perfect battery to operate DC to AC inverters
- Suitable for slow discharge/ charge as well as high surge in/out
- Models available from 100Ah up to 225Ah

GEL batteries - 2 volt cells, traction (forklift) quality (go to page 66)

- Designed to last for over 10 years.
- Multiple cycle life 1200 - 3000 cycles (dependent on discharge level).

- Perfect battery to create high power battery banks (600 - 8000Ah).
- Best choice in case of frequently used high amperage inverter power.
- Can be re-charged with high current (50% of the nom. capacity).
- Guarantee period of 7 years.

Lithium-Ion batteries - (go to page 68)

- Highest energy density.
- Space saving up to 70% compared with GEL/ AGM.
- 30 - 40% weight reduction.
- Longest cycle life - appr 4000 cycles (max 50% discharge).
- Battery Management System for cell balancing included.



What all our batteries have in common

- ☑ They are all sealed and maintenance free
- ☑ They are safe - no danger of electrolyte spill or gassing
- ☑ They can be installed at different angles
- ☑ They are non-hazardous and can be transported in airplanes
- ☑ They are shockproof - if the battery is damaged no liquid will come out
- ☑ They are designed for a large number of charge/ discharge cycles
- ☑ They are designed to last for 10-20 years (design life nominal circumstances)
- ☑ They are supplied through the WhisperPower network with appropriate charging devices
- ☑ Self-discharge is limited - batteries can be stored for many months without charging
- ☑ Minor ventilation is needed in the location where the batteries are placed
- ☑ They are delivered with an extended system warranty
- ☑ Our warranties extend across the globe, exchange made easy

Manufacturing partners

Specifications of all WhisperPower batteries are meticulously defined by us based on the requirements of our systems. The manufacture of our batteries is carried out by carefully selected factories according to some very important criteria:

- Only the best is good enough,
- We only operate with premium manufacturing partners
- The process of manufacturing has to be top class and absolutely non-polluting
- Our main manufacturing partner is a NASDAQ listed company, employing more than 2000 people, fully ISO9001: 2000 approved.

Long life AGM batteries

These are the most cost effective, maintenance free batteries which are designed for extended cycle life. WhisperPower's AGM's are based on VRLA technology (Valve Regulated Lead Acid) meaning they do not need extended ventilation, can be mounted in any orientation and do not require any maintenance.



Typical example of an AGM battery bank, powering a 3.5 kW inverter

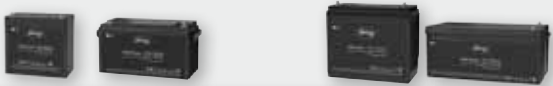
Applications

- Starting of main engines and auxiliary engines
- Powering winches and thrusters
- Providing DC power to the on-board electrical system
- Back-up battery for vital functions like the emergency radio
- Appropriate for limited inverter power

Product Recommendations

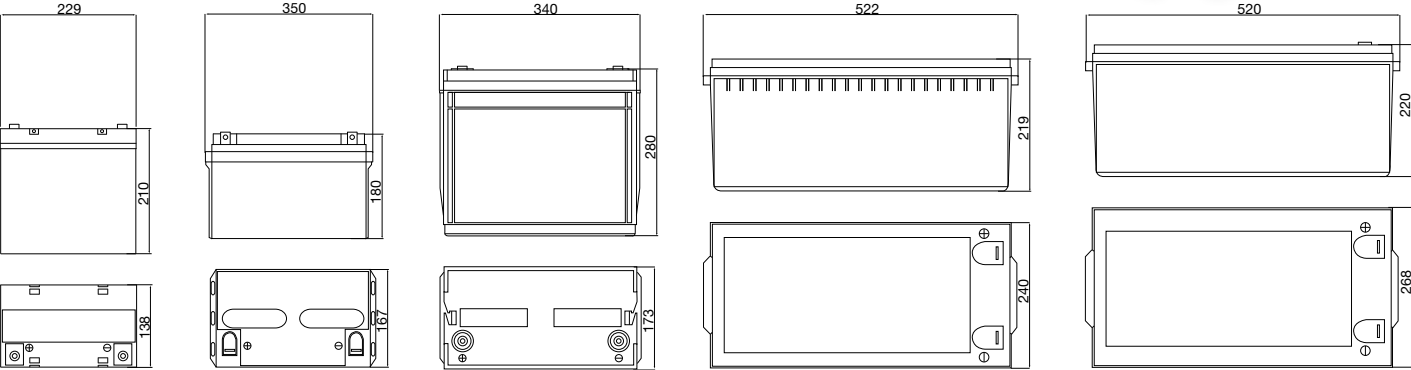
- Follow 3-step charging (IUoUo). Go to page 52
- Allow charger to remain connected to the battery during periods of non-use
- Use temperature sensor to monitor the battery temperature
- Alternator to be operating on 'float voltage only'
- Fit with ACR regulator as alternator will charge the battery faster and to 100%. Go to page 38

Technical specifications AGM

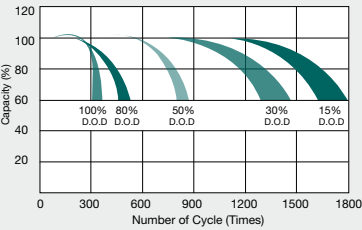


| AGM Power Part # | 40290060 | 40290061 | 40290031 | 40290062 | 40290063 | 40290064 |
|--|--|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Specifications | | | | | | |
| Nominal capacity (C10*) | 55 Ah | 80 Ah | 100 Ah | 145 Ah | 200 Ah | 260 Ah |
| Nominal voltage | 12.0 VDC | 12.0 VDC | 12.0 VDC | 12.0 VDC | 12.0 VDC | 12.0 VDC |
| Type | Deep cycle Absorbed Glass Mat battery with 10 years floating design life, specially designed for frequent cyclic discharge usage. By using strong grid and specific paste plate, gives the battery 30% more cyclic life. Applicable for marine, mobile and PV energy systems and as an engine starter battery. | | | | | |
| Weight +/- 10% | 18.0 Kg | 24.0 Kg | 30.0 Kg | 44.0 Kg | 60.0 Kg | 74.0 Kg |
| Dimensions l*w*h [mm] (excl. terminals) | 229*138*210 | 350*167*180 | 328*172*222 | 340*173*280 | 522*240*219 | 520*268*220 |
| Terminal type | M8 stainless steel | | | | | |
| Number of cells | 6 | 6 | 6 | 6 | 6 | 6 |
| Charge/discharge parameter | | | | | | |
| Constant voltage Charging (IU, float) | 13.60 to 13.80 VDC @ 25C | | | | | |
| Cyclic Charging (IUU, absorption) | 14.25 to 14.60 VDC @ 25 C | | | | | |
| Recommended charging current limit (higher possible) | 40 - 50% of nominal capacity | | | | | |
| Temperature ratio | -4mv/cell/°C | | | | | |
| Discharge cut off voltage | 1.75 VDC @ (A) <= 0.2 C 1.70 VDC @ 0.2 C (A) <= 1.0 C | | | | | |
| 100% depth of discharge d.o.d. | 1.65 VDC @ (A) >= 1.0 C | | | | | |
| Rated Capacity @ 25°C | rate to 1.75 VDC per cell | rate to 1.75 VDC per cell | rate to 1.75 VDC per cell | rate to 1.80 VDC per cell | rate to 1.80 VDC per cell | rate to 1.80 VDC per cell |
| 20 hrs discharge | 58.6 Ah | 85.3 Ah | 104.0 Ah | 167.0 Ah | 226.0 Ah | 278.0 Ah |
| 10 hrs discharge | 55.0 Ah | 80.0 Ah | 100.0 Ah | 145.0 Ah | 200.0 Ah | 260.0 Ah |
| 5 hrs discharge | 44.5 Ah | 65.0 Ah | 89.0 Ah | 131.0 Ah | 180.0 Ah | 220.0 Ah |
| Peukert Coefficient | 1.21<P<1.24 | 1.21<P<1.24 | 1.21<P<1.24 | 1.21<P<1.24 | 1.21<P<1.24 | 1.21<P<1.24 |
| Time reserve minutes 25 amps discharge | 92 minutes | 146 minutes | 190 minutes | 305 minutes | 455 minutes | 630 minutes |
| Self discharge | less than 3% per month @ 25°C | | | | | |
| Storage time | AGM-power batteries can be stored for maximum 6 months at 25°C, Charging recommended before using. | | | | | |
| Battery parameters | | | | | | |
| Cranking amps @ 25°C (5 sec) | 550 A | 800 A | 1000 A | 1450 A | 2000 A | 2600 A |
| Cycle life at 80% of D.O.D | 400 | 400 | 400 | 400 | 400 | 400 |
| Internal resistance Approx. | 6.0 mΩ | 5.5 mΩ | 5.0 mΩ | 4.5 mΩ | 4.0 mΩ | 3.5 mΩ |

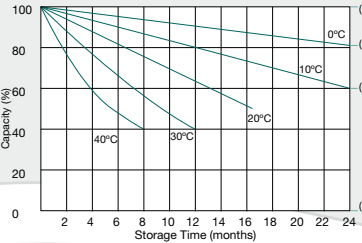
*) C 10 = battery capacity measured during a discharge time of 10 hrs at 5 % discharge rate.



Life characteristics of cyclic use

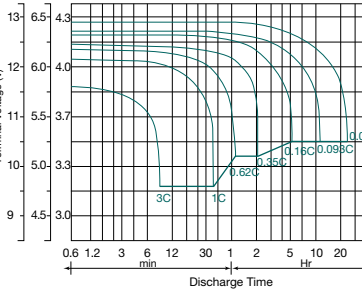


Storage characteristics



- *(A) Supplementary charge required (Carry out supplementary charge before use if 100% capacity is requires)
- *(B) Supplementary charge required before use. This supplementary charge will help to recover the capacity and should be made as early as possible
- *(C) Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached
- *(D) Supplementary charge and storage guidelines

Discharge characteristics curve



Deep cycle GEL batteries - 12V



Our GEL batteries are the most reliable and powerful batteries available on the market.

We offer a choice of 2 different technologies:

- Our 12V GEL cells, suitable to build one-bank power systems up to appr 700Ah (12 or 24VDC)
- 2 Volt GEL cells suitable to make systems up to 2000Ah/ 12 24 or 48VDC, as a solid one-bank configuration

How do 12V GEL batteries differ from AGM batteries

- In GEL batteries the electrolyte is absorbed by a gel material as a consequence, the battery is stronger and more robust
- GEL has a better heat dissipating behaviour compared to Absorbed Glass Matt batteries (AGM)
- GEL is suitable to provide charge/ discharge cycles
- 12V GEL batteries are the best choice for frequently used power systems

How does a 2V GEL battery differ from a 12V GEL battery

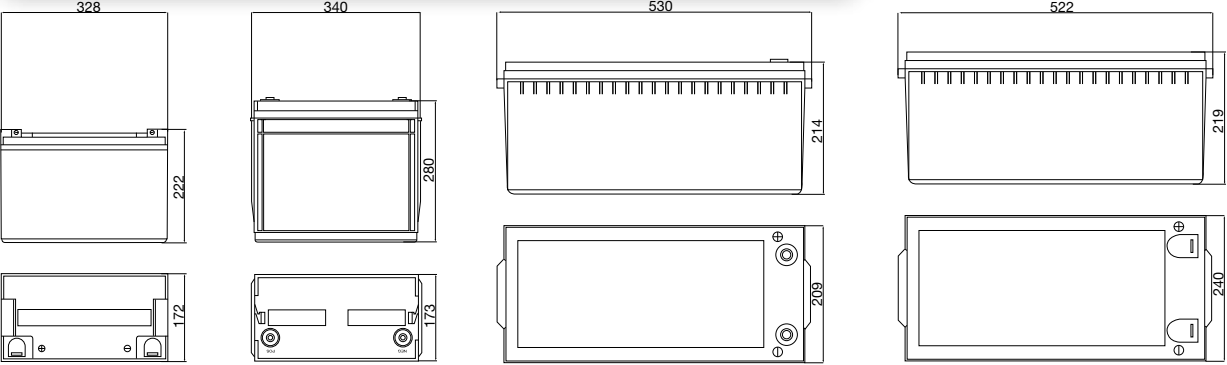
- 2 Volt cells are designed for daily deep charge/ discharge cycles
- 2 Volt cells are used in various industrial fields like internal transportation
- 2 Volt cells can stand heavy discharges (by electrical motors for example) and high current re-charging.
- 2 volt cells are constructed from tubular cells in stead of flat plates resulting in a very high power density
- 2 Volt cells can go up to 2000Ah
- Series/ parallel connections will not result in voltage drops - and unequal charging

For more information, please refer to pages 86 and 87

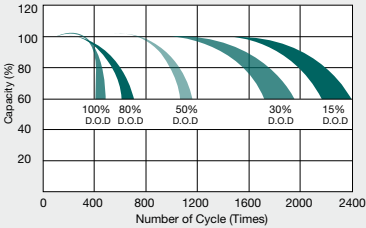
Technical specifications 12V GEL



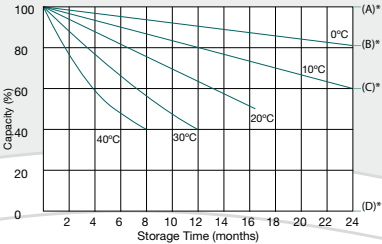
| GEL Power Part # | 40290070 | 40290071 | 40290072 | 40290073 |
|--|--|---------------------------|---------------------------|---------------------------|
| Specifications | | | | |
| Nominal capacity (C20) | 100 Ah | 145 Ah | 180 Ah | 225 Ah |
| Nominal voltage | 12.0 VDC | 12.0 VDC | 12.0 VDC | 12.0 VDC |
| Type | Deep cycle GEL battery with 12 years floating design life. Superior design for frequent cyclic discharge applications under extreme temperatures. Strong grid construction to ensure reliability under frequent deep discharge use. Over 400 cycles possible at 100% DOD. Extra durable cyclic performance, high efficiency of recovery, therefore most suitable for solar, mobility, marine and deep discharge UPS installations. | | | |
| Weight +/- 10% | 30.0 Kg | 44.0 Kg | 53.0 Kg | 65.0 Kg |
| Dimensions l*w*h [mm] (excl. terminals) | 328*172*222 | 340*173*280 | 530*209*214 | 522*240*219 |
| Terminal type | M8 stainless steel | | | |
| Number of cells | 6 | 6 | 6 | 6 |
| Charge/discharge parameters | | | | |
| Constant voltage Charging (IU, float) | 13.60 to 13.80 VDC @ 25C | | | |
| Cyclic Charging (IUU, absorption) | 14.25 to 14.60 VDC @ 25 C | | | |
| Recommended charging current limit (higher possible) | 20.0 A 29.0 A 36.0 A 45.0 A | | | |
| Temperature cut-off ratio | 4mv/cell/°C | | | |
| Discharge cut off voltage | 1.75 VDC @ (A) <= 0.2 C 1.70 VDC @ 0.2 C (A) <= 1.0 C | | | |
| 100% depth of discharge d.o.d. | 1.65 VDC @ (A) >= 1.0 C | | | |
| Rated Capacity @ 25°C | rate to 1.75 VDC per cell | rate to 1.75 VDC per cell | rate to 1.80 VDC per cell | rate to 1.80 VDC per cell |
| 20 hrs discharge | 100.0 Ah | 145.0 Ah | 180.0 Ah | 225.0 Ah |
| 10 hrs discharge | 95.0 Ah | 136.0 Ah | 169.0 Ah | 209.0 Ah |
| 5 hrs discharge | 84.0 Ah | 117.0 Ah | 146.0 Ah | 181.0 Ah |
| Peukert Coefficient | 1.21<P<1.24 | 1.21<P<1.24 | 1.21<P<1.24 | 1.21<P<1.24 |
| Time reserve minutes 25 amps discharge | 165 minutes | 261 minutes | 341 minutes | 450 minutes |
| Self discharge | less than 3% per month @ 25°C | | | |
| Storage time | GEL-power batteries can be stored for maximum 6 months at 25°C, Charging recommended before using. | | | |
| Battery parameters | | | | |
| Cranking amps @ 25°C (5 sec) | 1000 A | 1450 A | 1800 A | 2250 A |
| Cycle life at 80% of D.O.D | 600 | 600 | 600 | 600 |
| Internal resistance Approx. | 7.5 mΩ | 5.0 mΩ | 6.0 mΩ | 4.0 mΩ |



Life characteristics of cyclic use

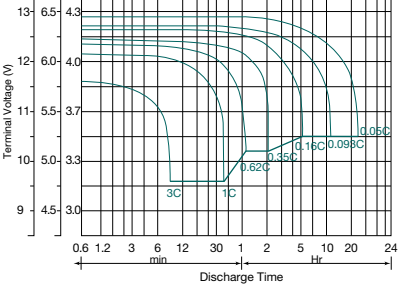


Storage characteristics



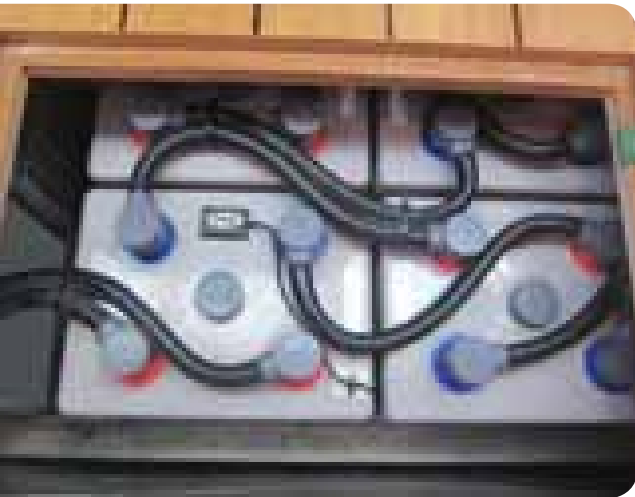
*(A) Supplementary charge required (Carry out supplementary charge before use if 100% capacity is requires)
*(B) Supplementary charge required before use. This supplementary charge will help to recover the capacity and should be made as early as possible
*(C) Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this state is reached

Discharge characteristics curve



Deep cycle GEL batteries - 2Volt

2V GEL Power can be installed horizontally and vertically recommended. At picture 1650 Ah cells/ 24 V, installed under the floor of a 55 ft yacht, in the middle of the ship. Perfect for the balance of the boat, appr. 1.5 Ton of weight far below the waterline. Connection cables to interconnect the 2V cells are supplied as standard.



Underfloor battery bank 24V / 1650Ah



2Volt cells

Product recommendations for both 2 and 12 V GEL batteries:

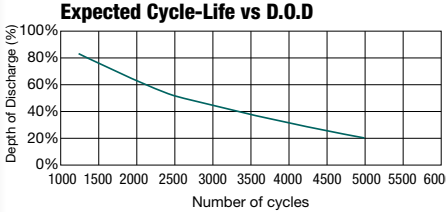
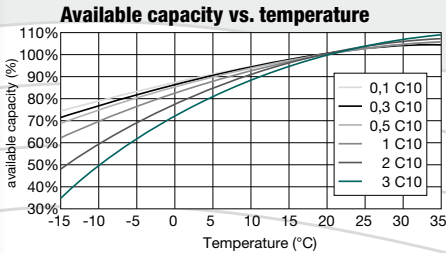
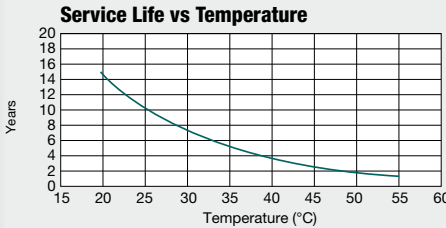
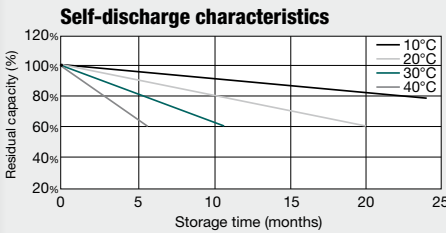
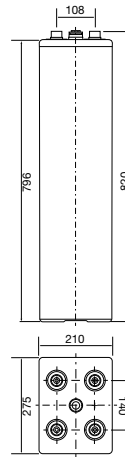
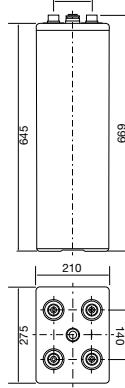
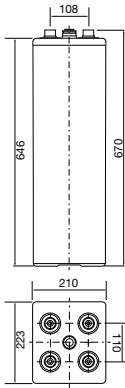
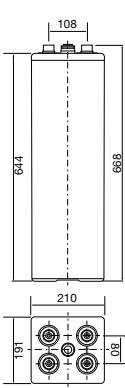
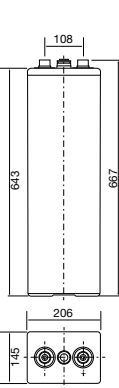
- Follow 3-step charging (IUoUo).
- Allow charger to remain connected to the battery during periods of non-use
- Check temperature sensor to monitor the battery temperature
- Alternator to be operating on 'float voltage only'
- Fit with ACR regulator, alternator will charge the battery fast and 100%. Go to page 38

- GEL batteries - 2 volt cells, traction (forklift) quality**
- Designed to last for over 10 years
 - Multiple cycle life 1200 - 3000 cycles (dependent on discharge level)
 - Perfect battery to create high power battery banks (600 -2000 Ah)
 - Best choice in case of frequently used high amperage inverter power
 - Can be re-charged with high current (50% of the nom. capacity)
 - Guarantee period of 7 years

For more information, please refer to pages 84 and 85

Technical specifications 2V GEL

| OPzV 2 Volt GEL Power Art. Nr. | 40290040 | 40290041 | 40290042 | 40290043 | 40290044 |
|--|---|---------------------------|---------------------------|---------------------------|---------------------------|
| Specifications | | | | | |
| Nominal capacity (C10) (1.8 V cell, 20 °C) | 750Ah | 1000Ah | 1250Ah | 1500Ah | 1650Ah |
| Nominal voltage | 2VDC | 2VDC | 2VDC | 2VDC | 2VDC |
| Type | WhisperPower OPzV Valve Regulated batteries are extremely suitable for applications with extended charge / discharge cycles. They are fully maintenance free. WhisperPower GEL power batteries are based on tubular plate technology and the fixing of the electrolyte as GEL. Typical applications include reserve power supplies for backup power, marine / mobile power banks and safety power supply equipment. | | | | |
| Weight +/- 10% | 50.0 Kg | 68.0 Kg | 82.0 Kg | 97.0 Kg | 120.0 Kg |
| Dimensions l*w*h [mm] (incl. terminals) | 145*206*667 | 191*210*668 | 233*210*670 | 275*210*669 | 275*210*820 |
| Terminal type | M 10 / 2 | M 10 / 4 | M 10 / 4 | M 10 / 4 | M 10 / 4 |
| Number of plates per cells | 6 | 8 | 10 | 12 | 12 |
| Charge/discharge parameter | | | | | |
| Boost Charge Voltage (V/cell) | 2.35VDC @ 20°C | | | | |
| Floating voltage set point (V/cell) | 2.25VDC @ 20°C | | | | |
| Initial charge current (A) 0.4 C10 | 240A 320A 400A 480A 600A | | | | |
| Temperature cut-off ratio | 4mv/cell/°C | | | | |
| Recommended End of Discharge voltage for 10-hr rate (V/cell) | 1.80 VDC/cell | | | | |
| Recommended End of Discharge voltage for 1-hr rate (V/cell) | 1.65 VDC/cell | | | | |
| Rated Capacity @ 20°C | rate to 1.80 VDC per cell | rate to 1.80 VDC per cell | rate to 1.80 VDC per cell | rate to 1.80 VDC per cell | rate to 1.80 VDC per cell |
| 10 hrs discharge | 750Ah | 1000Ah | 1250Ah | 1500Ah | 1650Ah |
| 5 hrs discharge | 650Ah | 865Ah | 1085Ah | 1305Ah | 1355Ah |
| 1 hrs discharge | 314Ah | 489Ah | 570Ah | 629Ah | 647Ah |
| Peukert Coefficient | 1.21<P<1.23 | 1.21<P<1.23 | 1.21<P<1.23 | 1.21<P<1.23 | 1.21<P<1.23 |
| Time reserve minutes 25 amps discharge | 24 hrs | 32 hrs | 40 hrs | 48 hrs | 60 hrs |
| Self discharge | less than 2% per month @ 20°C | | | | |
| Storage time | OPzV-power batteries can be stored for maximum 6 months at 20°C, Charging recommended before using. | | | | |
| Battery parameters | | | | | |
| Short circuit current of the battery cell (A) | 5840A | 7170A | 8540A | 9360A | 10500A |
| Cycle life at 80% of D.O.D | 1250 | 1250 | 1250 | 1250 | 1250 |
| Internal resistance Approx. | 0.35 mΩ | 0.29 mΩ | 0.24 mΩ | 0.22 mΩ | 0.19 mΩ |



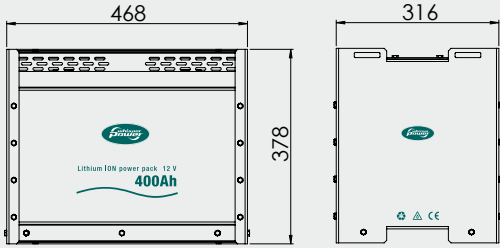
Premium batteries from small to large systems Lithium-Ion

Lithium-Ion batteries have the highest energy density of all batteries available on the market. In 2005, industrial quality Lithium-Ion batteries started emerging on the market, including for use in the fields of yachting and shipping. Whisper-Power's ION POWER is made from the best cells available and is supplied as a complete functional system with charger, inverter or combi and protection accessories. We supply the complete required capacity (12 or 24VDC) in either one or two enclosures, including the BMS (cell balancing) electronics. Remember, it is not possible to simply use lithium-Ion batteries on their own as it is the additional electronics and protection circuitry which renders them functional.

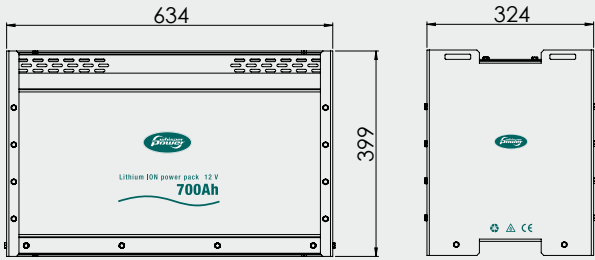


Features & Benefits

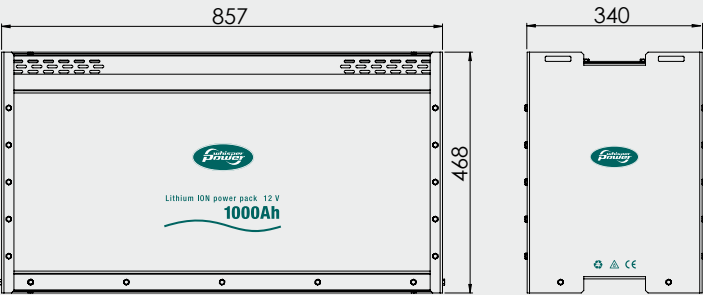
- Highest energy density.
- Longest duration of life (> 10 yrs, normal conditions).
- Space saving up to 70% compared with GEL/ AGM.
- 30 - 40% weight reduction.
- Long cycle life - appr 4000 cycles (max 50% discharge).
- Fast charging in combination with high DC discharging;
- 90% of nominal capacity can be charged back.
- High surge capability.
- Short generator running time, as result (fuel saving).
- DC voltage up to 750 VDC configurable (hybrid propulsion)
- 7 years warranty (pro rata)



400 Ah



700 Ah



1000 Ah

Available configurations

- Models: 12/160 Ah - 12/200 Ah - 12/400 Ah - 12 /700 Ah - 12/1000 Ah
- 24/160 Ah - 24/200 Ah - 24/400 Ah - 24/700 Ah - 24/1000 Ah
- 48/200 Ah - 48/400 Ah - 48/700 Ah - 48/1000 Ah
- High DC systems at request

General specifications

| | |
|--|---------------------------------|
| Technology | Lithium-Ion LiFe PO4 |
| Cell voltage | 3.2 VDC/ each cell |
| Battery Manag. System - cell balancing | Integrated inside the enclosure |
| Capacity in Ah | Discharge rate 1 - 20 hours |
| Battery monitoring | Integrated |
| Battery low voltage disconnect | Externally |

Battery charging by

- DC PowerCube
- WPC Power Centre
- WP Combi
- Supreme battery charger
- DC Beltpower with ACR
- Suntrack solar charge controller

'Lithium-Ion batteries are the best choice for extended power systems such as hybrid power and propulsion systems for tourist boats, electrical ferries, hybrid syle workboats etc.'

Products & Parts

Battery related items

When specifying the DC power system of a yacht, the selection of the battery and the related charging systems are not the only things you need to consider. The components connected to the battery or relating to the battery are equally important for the final result. Our product options include:



Battery monitor WBM
integrated in Switch Board Panel

WBM: WhisperBatteryMonitor

- Precise monitoring helps to protect the battery and optimize life span
- WBM Pro can monitor two separate batteries
- Exact HOURS-AND-MINUTES-TO-GO indication
- Simultaneous accurate volt and amp meter
- Attractive round 52 mm design - fits in any dashboard

WhisperSolarPanels

- Add extra charge power using sun and daylight, free of charge
- Modules for fixed mounting or semi flexible for on-deck or roof mounting
- Accurate Suntrack solar charge controller optional
- 12, 24 V DC

WhisperElectricalCables

- We can provide our inverters and combi's with pre-wired battery cables
- Our high quality marine grade DC cables are also available per required length
- Cable connections and cable eyes can be pre-mounted



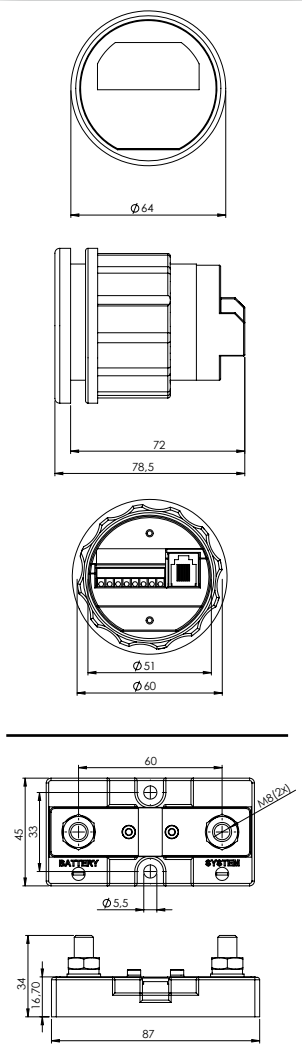
| BATTERY CABLE | | | |
|---------------|---------------------|--------------------|--|
| 50213070 | Battery cable Red | 16 mm² (drum 50 m) | |
| 50213071 | Battery cable Black | 16 mm² (drum 50 m) | |
| 50213075 | Battery cable Red | 25 mm² (drum 25 m) | |
| 50213076 | Battery cable Black | 25 mm² (drum 25 m) | |
| 50213085 | Battery cable Red | 35 mm² (drum 25 m) | |
| 50213086 | Battery cable Black | 35 mm² (drum 25 m) | |

Technical specifications WBM - Battery Monitors



| Parameter Art. Nr. | WBM-Basic 40290310 | WBM-Pro 40290311 | WBM-Pro HV 40290312 |
|---|--|---|---|
| Technical specifications | | | |
| Supply voltage range | 9..35 VDC | 9..35 VDC | 14..70 VDC |
| Supply current ¹⁾ : @Vin=24VDC | 7 mA | 7 mA | 5 mA (@Vin=48VDC) |
| | @Vin=12VDC | 9 mA | 6 mA (@Vin=36VDC) |
| Input voltage range (auxiliary battery) | 2..35 VDC | 2..35 VDC | 2..35 VDC |
| Input voltage range (main battery) | 0..35 VDC | 0..35 VDC | 0..70 VDC |
| Input current range ²⁾ | -999..+999A | -9999..+9999A | -9999..+9999A |
| Battery capacity range | 20..999 Ah | 20..9990 Ah | 20..9990 Ah |
| Operating temperature range | -20..+50°C | -20..+50°C | -20..+50°C |
| Readout resolution : voltage | ± 0.1V (0..35V) | ± 0.01V (0..35V) | ± 0.01V (0..70V) |
| | current | ± 0.1A (0..100A) | ± 0.1A (0..200A) |
| | current | ± 1A (100..999A) | ± 1A (200..9999A) |
| | capacity range | ± 0.1Ah (0..100Ah) | ± 0.1Ah (0..200Ah) |
| | capacity range | ± 1Ah (100..999Ah) | ± 1Ah (200..9990Ah) |
| | state-of-charge (0..100%) | ± 0.1% | ± 0.1% |
| | time remaining (0..24hrs) | | ± 1 mn |
| time remaining (24..240hrs) | | ± 1 hr | ± 1 hr |
| | temperature (-20..+50°C) ³⁾ | ± 0.5°C | ± 0.5°C |
| Voltage measurement accuracy | ± 0.3% | ± 0.3% | ± 0.3% |
| Current measurement accuracy | ± 0.4% | ± 0.4% | ± 0.4% |
| Material of housing | ABS | ABS | ABS |
| Color | RAL 7021 black/ grey | RAL 7021 black/ grey | RAL 7021 black/ grey |
| Dimensions : | frontpanel / body diameter | ø 64 mm / ø 52 mm | ø 64 mm / ø 52 mm |
| | total depth / weight | 79 mm / 95 gr | 79 mm / 95 gr |
| Shunt dimensions : | footprint | 45 x 87 mm | 45 x 87 mm |
| | height | 17 mm (base) / 35 mm (high current fasteners) | 17 mm (base) / 35 mm (high current fasteners) |
| | weight | 145 gr | 145 gr |
| Protection class | IP20 (frontpanel only IP65) | IP20 (frontpanel only IP65) | IP20 (frontpanel only IP65) |

¹⁾ Measured with backlight and alarm relay turned off. ²⁾ Depends on selected shunt. With standard delivered 500A/50mV shunt (350A continuous), the range is limited to -600..+600A. ³⁾ Only available when optional temperature sensor is connected.



Technical specifications

WhisperSolarPanels



| SOLAR MODULES | | | |
|---|---------------------|--------|-------------------------------------|
| Semi Flexible | | | |
| 25 watt | Size 38 cm x 56 cm | 0,3 Kg | Nom voltage: 12V |
| 50 Watt | Size 53 cm x 76 cm | 0,5 Kg | Nom voltage: 12V |
| Mono/ poly modules in frame | | | |
| 90 Watt | Size 121 cm x 54 cm | 8Kg | Nom voltage 12 . open voltage 21VDC |
| 130 Watt | Size 148 cm x 66 cm | 12 Kg | Nom voltage 12 . open voltage 22VDC |
| 250 Watt | Size 163 cm x 98 cm | 20 Kg | 24VDC - open voltage 37.2VDC |
| Suntrack mpp solar charge controllers | | | |
| Max. 15A: SUNTRACK 15 - max 48VDC input, 12 or 24 VDC out/ 3 step curve | | | |
| Max. 60A: SUNTRACK 60AMPS – Max 150VDC – any voltage > 150VDC out, 3-step | | | |
| Max. 80A: SUNTRACK 80AMPS – Max 150VDC – any voltage . 150VDC out, 3-step | | | |

AC Power Distribution

Most yachts and professional craft need 230V 50Hz shore power connection and for in some countries, 120V / 60Hz (USA) or 100V / 60Hz (Japan, Taiwan). The most common onboard appliance to maintain the service, thruster and / or starter batteries, is the battery charger. For cases

where more AC appliances have to be connected, a safe AC distribution and load management system is needed. WhisperPower is a specialist in this field providing reliable and cost effective AC power distribution components.

Range of Products

- Shore-to-ship cable sets and boat inlets: Go to page 73
- Galvanic isolators: Go to page 76
- Isolation transformers: Go to page 76
- Earth leak protectors: Go to page 75
- AC distribution - fuses - analogue: Go to page 75
- AC Distribution - digital switching: Go to page 75
- Automatic transfer systems: Go to page 75



Safe and reliable AC power connections ShoreConnect

When yachts, vessels and vehicles are connected to shore power, generators can be switched off. Onboard batteries, charged from shore power via the onboard battery chargers, transfer AC power directly to AC appliances. WhisperPower is your one stop shop for top class AC connection components.

WP-ShoreConnect program

WP-ShoreConnect is your 'link' to a comfortable and pleasant stay on board of your vehicle or vessel. When connected to the public grid, the shore power is the energy source for your on board equipment including the batteries. WP-ShoreConnect is a waterproof inlet, mounted on the outside of your boat. WP-ShoreConnect offers the full range you need for a safe & reliable shore connection. Our product design is based on the international IEC 60309 standard for outdoor connections.

- 16A/250V, 25A/250V, 1phase, 3 wire
- Watertight molded plug and connector
- Power LED indication, power ON
- Weatherproof storage bag
- Waterproof, IP56 protection
- Choice of stainless steel or polyamid inlet

| WHISPERPOWER SHORE CONNECT 230V 50HZ | |
|--------------------------------------|---|
| 50214751 | Shore power cable, with molded plug 15m, 16A (Storage bag included) |
| 50214752 | Shore power cable, with molded plug 25m, 16A (Storage bag included) |
| 50214741 | Shore power cable, with molded plug 15m, 25A (Storage bag included) |
| 50214742 | Shore power cable, with molded plug 25m, 25A (Storage bag included) |
| 50214680 | WP-Shore Inlet 16A, polyamide plastic, with cover |
| 50214684 | WP-Shore Inlet 16A, Stainless steel, with cover |
| 50214685 | WP-Shore Inlet 32A, Stainless steel with cover |
| 50214688 | WP-Shore inlet plug 16A / 250V, 2pole-3wire for inlet 16A |
| 50214689 | WP-Shore inlet plug 32A / 250V, 2pole-3wire for inlet 32A |
| 50214720 | Adaptor Cord 16A / 250V schuko to CEE |

Shore / land 250V / 50 Hz
1-phase, 2-pole, 3-wire



On board AC distribution WhisperSwitch

We offer ready-to-install AC power distribution and protection circuitry for small and medium size yachts and vehicles. Our digital WP Logic network, based on CAN-Bus technology (SAE J 1939), can be supplied as a complete ‘Domotica’ digital switching system. The traditional analogue WhisperSwitch systems include automatic switching between various power sources and automatic circuit breakers.

Fully integrated plug and play

With WhisperSwitch, different power sources can be combined to operate automatically. Shore power and generator/ or inverter power IN, on board groups (230 VAC or 120 VAC) OUT, are all connected together in one box. The connected appliances will take power from the source which is active at that time. WhisperSwitch is limited to two inputs and one output. The range is as follows:

- 2 input, 1 output, 6kW/ 26 Amp power rating, 230V / 50Hz
- 2 input, 1 output, 10kW/ 42 Amp power rating, 230V / 50Hz
- 2 input, 1 output, 6kW/ 50 Amp power rating, 120V / 60Hz
- 2 input, 1 output, 10kW, 83 Amp power rating, 120V / 60Hz

AC Transfer System switches

These switches are designed to connect 3 power sources: The AC power supply the shore, the generator and the inverter, with three outgoing circuitries

Earth leakage protection

WhisperPower earth leakage protection devices are available for single and three phase systems. This device protects the electrical installation against the leakage of electricity, preventing dangerous situations as a consequence.



Generator



Shore



Inverter

Technical Data

| WP-LOGIC - DIGITAL SWITCHING - AND DISTRIBUTION SYSTEMS | | | |
|---|--|-------------------------------|--|
| 60116001 | WP-Logic Panel module i/o - set-up a/m | | |
| 60116002 | WP-Logic Power module DC distribution, 8 groups a/m | | |
| 60116003 | WP-Logic Power module AC distribution 8 groups | bipolar, 16 Unipolar | |
| 60116004 | WP-Logic Software for Touch screen | | |
| 60116007 | WP-Logic Touch screen -7 Inch | | |
| 60116006 | USB / CAN Converter | tools including configuration | |
| 60116021 | WP-Logic Fuse 2-pole | 5A | |
| 60116022 | WP-Logic Fuse 2-pole | 10A | |
| 60116023 | WP-Logic Fuse 2-pole | 16A | |
| 67030510 | USB / CAN Converter | usb 400 remote generator | |
| 60116010 | Avisario W 23133 LAN box 2.0 [SD] with CAN interface | [IPhone] | |
| 60116011 | CAN Cable 1x2x0.50HOC | CAN.BUS | |



WP-Logic

As an alternative to the traditional analogue WhisperSwitch range, we offer our WP-Logic digital switching range of products. WP-Logic is a decentralized, user configurable power distribution system for both DC and AC, based on CAN-Bus technology (SAE J1939). Below we have listed the selection of DC and AC system components.



WP- AC Transfer System Switch



WP-Logic
AC Module

Power group GEN/SHORE

Short break GEN/SHORE inverter



Technical Data

| POWER DISTRIBUTION GENERATOR/SHORE OR INVERTER/SHORE | | | |
|--|----------------------|---------------------|---------------|
| 50214670 | Whisper Switch AC 5 | 6kW / 230V 1-phase | 2x in, 1x out |
| 50214671 | Whisper Switch AC 10 | 10kW / 230V 1-phase | 2x in, 1x out |
| 50214672 | Whisper Switch AC 5 | 6kW / 120V 1-phase | 2x in, 1x out |
| 50214673 | Whisper Switch AC 10 | 10kW / 120V 1-phase | 2x in, 1x out |

| POWER DISTRIBUTION GENERATOR/SHORE/INVERTER INPUTS | | | |
|--|-------------------------------------|---------------------|---------------|
| 50214690 | WP- AC Transfer System Switch 5 | 5kW / 230V 1-phase | 3x in, 3x out |
| 50214691 | WP- AC Transfer System Switch 10 | 10kW / 230V 1-phase | 3x in, 3x out |
| 50214692 | WP- AC Transfer System Switch AC 16 | 16kW / 230V-1phase | 3x in, 3x out |

| WHISPERPOWER GROUND FAULT CURRENT INTERRUPTER 3-PHASE | | |
|---|---|-----------------------|
| 50214665 | WP- Shore Connect RCD 25-3, Shore power circuit breaker | 25A / 230V-3ph-5 wire |
| 50214666 | WP- Shore Connect RCD 35-3, Shore power circuit breaker | 32A / 230V-3ph-5 wire |
| 50214667 | WP- Shore Connect RCD 63-3, Shore power circuit breaker | 62A / 230V-3ph-5 wire |



WP-GI

Ship-to-Shore Galvanic Protection

Just connecting a yacht or boat to the AC power socket of a marina, may cause damage to the vessel if galvanic protection has not been accounted for. Galvanic corrosion can damage or even destroy underwater metal parts of a boat and other metal parts in a marina. Corrosion can be partly prevented by fitting anodes under the waterline.

What is a Galvanic Isolator

- It is a small sheet metal enclosure containing some electronics and semi conductors
- It maximizes anode life and protects metal parts on boats against galvanic protection. It prevents stray current coming up from the earth link
- It maintains a good earth connection between ship and shore
- A WhisperPower Galavanic Isolator is connected to the anode and the bonding system of the yacht
- It has a power rating of 30 or 60 Amp

Why choose a WP-GI Isolation Transformer

- The BEST and most secure way is to install the WP-GI
- The WP-GI is essential for steel and aluminium yachts

The effectiveness of an anode depends on a good electrical connection and is directly proportional to its surface area. WhisperPower offers devices such as the cost effective Galvanic Isolator and the WP-GI isolation transformer, which minimize galvanic corrosion.

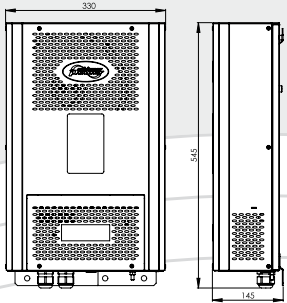
- The ground loop between shore and ship is fully interrupted by the coil inside the WP-GI, preventing galvanic corrosion
- The WP-GI has to be installed inside the boat, close to the incoming shore power connection - the output of the WP-GI has to be connected to the on-board AC power system
- Power rating of 16 A and 32 A (parallel operation of 2 WP-GI's)
- Includes soft start to suppress inrush current - shore power breaker will not blow
- WP-GI can be adjusted for 120VAC input power (vice versa) - World Wide Plug - in capability



Technical specifications WP-GI

| | | |
|---|--|-------------------|
| Article nr. 60110100 | WP-GI 3600 Galvanic Isolation-transformer | |
| Article nr. 60110300 | WP-GI 7000 - 2 units WP-GI 3600 for parallel use | |
| Application | Galvanic Isolation-transformer for safety and protection of galvanic corrosion | |
| Transformer type | 2 winding toroidal isolation transformer | |
| Construction method | Special vibration isolated mounting of transformer | |
| Cooling method | Temperature controlled gradually regulated forced air cooling above 60° transformer core | |
| Winding Data | WP-GI 3600 | WP-GI 7000 |
| Rated power | 3.6kVA | 7.0kVA |
| Rated voltage | 230V / 110V | 230V / 110V |
| Rated frequency | 50Hz / 60Hz | 50Hz / 60Hz |
| Nominal current | 16A / 32A | 30A / 60A |
| Inrush current | Softstart included <4A per unit | |
| Tappings | Prim/sec. mid-point (110VAC) | |
| Material winding | Copper | |
| Temperature rise class | Class F 100 K | |
| Insulation class | Class H 180 C | |
| Insulation level | Class AC3 | |
| Impedance | Secondary less than 3.0% at 3.6kVA | |
| General | | |
| No load consumption | 21W per unit | |
| Full load efficiency | >95% | |
| Ambient operating temperature | -10°C .. +45°C, derating to 80°C | |
| Storage temperature | -25°C to 85°C | |
| Operating humidity | 95% max, non-condensing | |
| Audible noise | <40.0 dB(A); <50dB(A) with forced cooling | |
| Local user interface | None | |
| Protections | | |
| Overcurrent, short circuit | Not included, external breaker(s) required according to local regulations | |
| Temperature protection | Automatic switch off if transformer core > 120°C | |
| Overvoltage protection | Softstart is protected for overvoltage using fuse | |
| Earthscreens between windings | Compliant to ABYC, can carry full fault current | |
| Safety | Standards IEC 60079, IEC 60726 | |
| Mechanical | | |
| Protection degree | IP21 | |
| Connections input/output | 6mm² max. | |
| Cable gland entry | 22mm | |
| Dimensions (HxWxD) | 510x330x150 per unit | |
| Mounting holes | M10 | |
| Weight | 28.6 kg per unit | |
| Enclosure construction | Steel sheet metal | |
| Surface finishing | RAL9003 structure powder coating | |
| Optional Article nr.: | <i>It is recommended to install a GFCI/RCD in the AC input line.</i> | |
| 60110105 WP-GI Replacement cover with DIN-rail mount | | |
| 50214640 Shore power circuit breaker 16A / 230V-1ph-3 wire | | |
| 50214641 Shore power circuit breaker 25A / 230V-1ph-3 wire | | |
| 50214642 Shore power circuit breaker 35A / 230V-1ph-3 wire | | |
| 50214645 WP-Energy Meter 1P+N 65A DIN-rail mount | | |

| | |
|---|-------------------|
| 60110140 WP-GI Galvanic Isolator Blocker 16A | |
| Maximale stroom | 16A |
| Piek stroom | 1600A / 20ms |
| Verbinding | 2 x M6 |
| Koel element | aluminium |
| IP category | IP 67 |
| Materiaal | Geanodiseerd alum |
| Afmetingen (hxbxd) | 60x120x200mm |
| 60110150 WP-GI Galvanic Isolator Blocker 30A | |
| Maximale stroom | 30A |
| Piek stroom | 1600A / 20ms |
| Verbinding | 2 x M6 |
| Koel element | aluminium |
| IP category | IP 67 |
| Materiaal | Geanodiseerd alum |
| Afmetingen (hxbxd) | 63x164x235mm |



DC Power Distribution

WhisperPower's philosophy is simple and clear: every single part of an electrical system must be equally reliable and robust. That is why all WhisperPower products and parts are made up of carefully designed components, built to last for ever. It is of vital importance, for the safety on board, that all parts and components 'relating to the battery' comply with these standards. We guarantee safe battery power management - from starter batteries up to high power Lithium-Ion batteries, we have the right components for your systems.

DC Power distribution portfolio:

- Heavy-duty manual on/off switches Go to page 79/81
- Remote battery switches Go to page 82
- Battery isolators Go to page 84
- Battery combiners/ links Go to page 86
- Low voltage disconnect devices Go to page 88
- DC-DC Converters Go to page 90

DC Power Distribution Compact DC Switches - 300 amp

Designed for battery banks of 12, 24 or 48 VDC, manually operated COMPACT series DC Switches are the best choice to connect or disconnect DC consumers from the relevant battery bank.

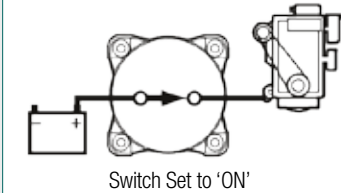
Features and benefits

- Robust and compact design
- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Multiple cable terminals, 22 mm stud length
- One piece terminal design prevents loosens over time
- Multiple cable input, allows surface, rear or front panel mounting
- Circuit identification label included
- CE marked
- UL listed accoring to UL 1701 power switches
- ABYC compliant
- Meets UL 1500 SAE J 1171 external ignition protection requirements
- Protection degree IP66

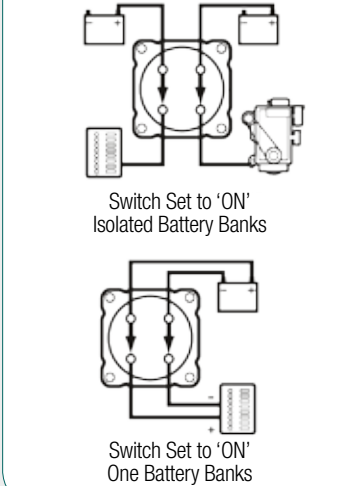


| Series Article no. | WP-Compact Series 50214701 | WP-Compact Series 50214702 | WP-Compact Series 50214703 |
|----------------------------------|----------------------------|----------------------------|----------------------------|
| Model type | Manual battery switch | Manual battery switch | Manual battery switch |
| Circuit type | on-off | dual circuit | dual circuit + combine |
| Input | | | |
| Battery input | 1 | 2 | 2 |
| Switch Posistions | 2 | 4 | 3 |
| Battery combine function | - | yes | yes |
| I 10 Cranking rating 10 sec | 1500 A | 1500 A | 1500 A |
| I 60 Cranking rating 1 min | 775 A | 775 A | 775 A |
| I 300 Cintermittent rating 5 min | 500 A | 500 A | 500 A |
| I C continue rating | 300 A | 300 A | 300 A |
| Vmno Voltage maxium Operation | 48VDC | 32VDC | 32VDC |
| General | | | |
| Ambient operation temperature | -20 C ... +40C | -20 C ... +40C | -20 C ... +40C |
| Storage temperature | -25 C ... +85C | -25 C ... +85C | -25 C ... +85C |
| Operating humidity | 95%, non condens | 95%, non condens | 95%, non condens |
| Mechanical | | | |
| Connections terminal stud | M10 (3/8"-.16) | M10 (3/8"-.16) | M10 (3/8"-.16) |
| Connections stud lenght | 22 mm | 23 mm | 24 mm |
| Maximum terminal Stud Torque | 13.56 NM (120 in-lb) | 13.56 NM (120 in-lb) | 13.56 NM (120 in-lb) |
| Terminal material | tin-plated copper | tin-plated copper | tin-plated copper |
| Enclosure width | 72 mm | 72 mm | 72 mm |
| Enclosure height | 78 mm | 78 mm | 78 mm |
| Weight | 0.28 kg | 0.28 kg | 0.28 kg |
| Drilling mounting centers | 55 mm | 56 mm | 57 mm |
| Rear panel mount diameter | 59 mm dia | 60 mm dia | 61 mm dia |
| Mounting screws | 10 mm | 11 mm | 12 mm |
| Ingress Protection Class | IP66 | IP67 | IP68 |
| Enclosure Colour | RAL9011 Graphite Black | RAL9011 Graphite Black | RAL9011 Graphite Black |
| Cable clearance | 28 mm (1.12") | 29 mm (1.12") | 30 mm (1.12") |
| Ignition Protection | UI 1500 SAE J1171 | UI 1500 SAE J1172 | UI 1500 SAE J1173 |
| Markings | CE, Iso 8846 | CE, Iso 8847 | CE, Iso 8848 |

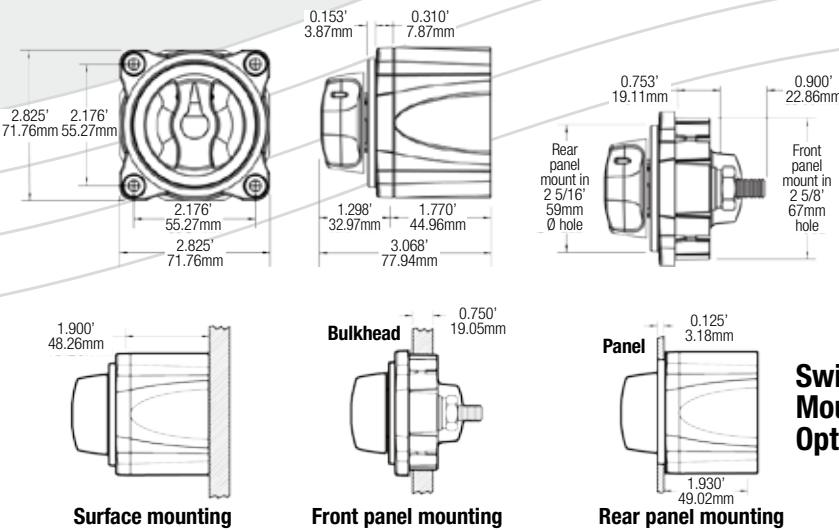
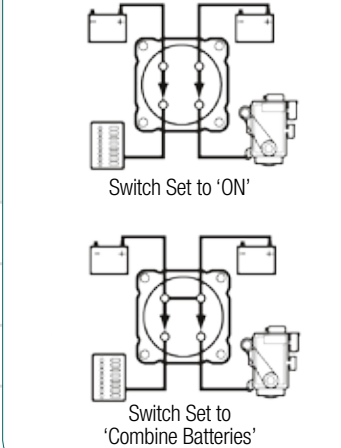
Circuit type on-off



Circuit type dual circuit



Circuit type dual circuit + combine



Switch Mounting Options



DC Power Distribution

Battery Switches HD-series - 600 amp

Quality Products engineered for the harsh marine environment and built to last

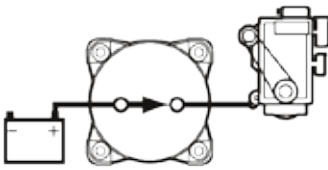
Features and benefits

- Robust and compact design
- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Multiple cable terminals, 22 mm stud length
- One piece terminal design prevents loosens over time
- Multiple cable input, allows surface, rear or front panel mounting
- Circuit identification label included
- CE marked
- UL listed accoring to UL 1701 power switches
- ABYC compliant
- Meets UL 1500 SAE J 1171 external ignition protection requirements
- Protection degree IP66



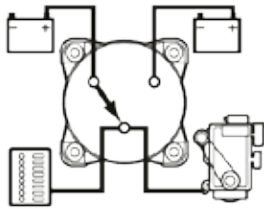
| Series Article no. | WP-HD series 50214711 | WP-HD series 50214712 |
|----------------------------------|-----------------------|-----------------------|
| Model type | Manual battery switch | Manual battery switch |
| Circuit type | on-off | selector 4 pos |
| Input | | |
| Battery input | 1 | 2 |
| Switch Posistions | 2 | 4 |
| Battery combine function | - | yes |
| I 10 Cranking rating 10 sec | 2750A | 2750A |
| I 60 Cranking rating 1 min | 1325A | 1150A |
| I 300 Cintermittent rating 5 min | 900A | 700A |
| I C continue rating | 600A | 500A |
| Vmno Voltage maxium Operation | 32V DC | 32V DC |
| General | | |
| Ambient operation temperature | -20 C ... +40C | -20 C ... +40C |
| Storage temperature | -25 C ... +85C | -25 C ... +85C |
| Operating humidity | 95%, non condens | 95%, non condens |
| Mechanical | | |
| Connections terminal stud | M12 1/2') | M12 1/2') |
| Connections stud lenght | 22mm | 22mm |
| Maximum terminal Stud Torque | 24.86 NM (220 in-lb) | 24.86 NM (220 in-lb) |
| Terminal material | tin-plated copper | tin-plated copper |
| Enclosure width | 98 mm | 98 mm |
| Enclosure height | 79 mm | 79 mm |
| Weight | 0.59 kg | 0.59 kg |
| Drilling mounting centers | 76 mm | 77 mm |
| Rear panel mount diameter | 92mm dia | 92mm dia |
| Mounting screws | m6 screw | m6 screw |
| Ingress Protection Class | IP66 | IP67 |
| Enclosure Colour | RAL7024 Graphite Grey | RAL7024 Graphite Grey |
| Cable clearance | 27.9 mm | 27.9 mm |
| Ignition Protection | UI 1500 SAE J1170 | UI 1500 SAE J1171 |
| Markings | CE, Iso 8845 | CE, Iso 8846 |

Circuit type on-off

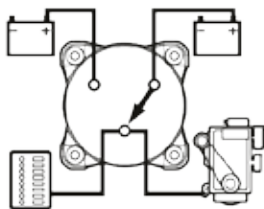


Switch Set to 'ON'

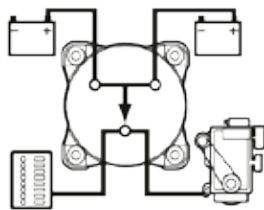
Circuit type selector 4 pos



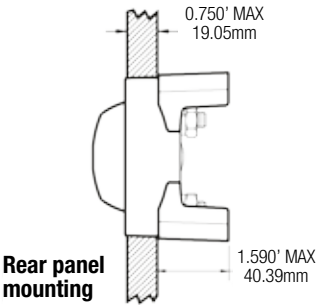
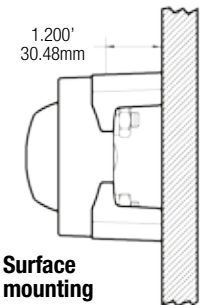
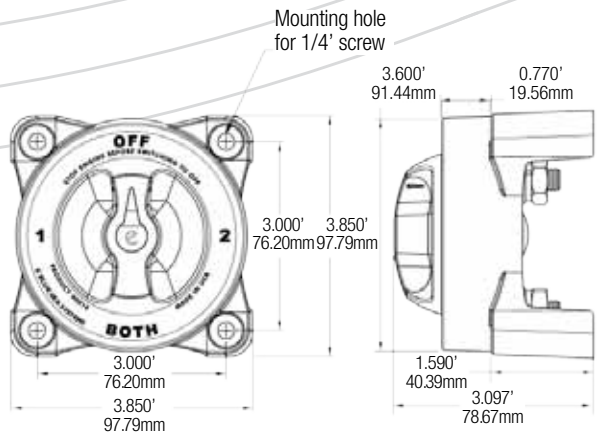
Switch Set to '1'



Switch Set to '2'



Switch Set to '1+2'



Switch Mounting Options

DC Power Distribution

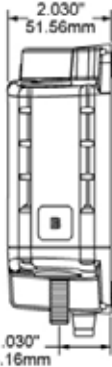
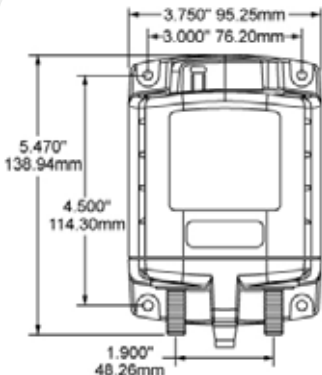
Remote battery switches magnetic latch - 500 amp

These are robust, quality products engineered for harsh marine environments and built to last. The WP-ML is a heavy duty remote battery switch. It features a 500 Amp magnetic latching (bi-stable) switch providing high-amp switching under load, which can be operated both manually or remotely.

- 500 Amp continuous rating
- Bi-stable or auto magnetic latching, very low no-load draw
- Manual override knob provides an added level of safety allowing control with or without power and offering LOCKED OFF capability of servicing
- LED output to remotely indicated switch state - requires optional LED
- 3/8"-16 tin-plated copper studs for maximum conductivity and corrosion resistance
- 7/8" (22 mm) stud length accepts multiple cable terminals
- Silver alloy contacts provide high reliability for switching live loads
- Remote Control Contura Switch to operate the Latch Relay optional.
- IP66 protection.



| Series | WP-ML-Serie Heavy Duty Remote Battery Switch | WP-ML-Serie Heavy Duty Remote Battery Switch | WP-ML- Automatic Charging Relays | WP-ML- Automatic Charging Relays |
|--|--|--|--|---|
| Article no. | 50214731 | 50214732 | 50214735 | 50214736 |
| Model type | 12 VDC Remote Magnetic Latch Battery Switch | 24 VDC Remote Magnetic Latch Battery Switch | 12 VDC Magnetic Latch Charging relay, link batteries | 24 VDC Magnetic Latch Charging relay, link batteries |
| Circuit type | ON-OFF... bi stable | ON-OFF... bi stable | Bi stable ACR | Bi stable ACR |
| Input | | | | |
| Battery input | 1 | 1 | 2 | 2 |
| Switch Posistions | 2 | 2 | 2 | 2 |
| Manual override | Locked off/on | Locked off/on | Locked On/off | Locked On/off |
| I 10 Cranking rating 10 sec | 2500A | 2500A | 2500A | 2500A |
| I 60 Cranking rating 1 min | 1100A | 1100A | 1100A | 1100A |
| I 300 Cintermittent rating 5 min | 700A | 700A | 700A | 700A |
| I C continue rating | 500A | 500A | 500A | 500A |
| Vmno Voltage maxium Operation | 32VDC | 32VDC | 32VDC | 32VDC |
| Control Circuit Voltage | 10.1..16.5VDC | 20.2...32.9VDC | 10.1..16.5VDC | 20.2...32.9VDC |
| Operatioun current continous | 0 mA | 0 mA | < 40mA | < 40mA |
| Operation current when chaning | 7 A | 4 A | < 7 A | < 7 A |
| Remote Control switch when changing | 100 mA | 100 mA | 100 mA | 100 mA |
| Automatically combines battery banks when senses voltage levels are: | | | Above 13.5 for 30 sec. Above 13.0 for 90 sec. | Above 27.0 for 30 sec. Above 26.0 for 90 sec. |
| Automatically isolates battery banks when sensed voltage levels are: | | Below 12.75V for 30 sec. | Below 9.6V (undervoltage lockout) Below 12.35V for 10 sec. Below 25.5V for 30 sec. | Below 19.2V (undervoltage lockout) Below 24.7V for 10 sec. Above 32.4V (undervoltage lockout) |
| General | | | | |
| Ambient operation temperature | -20°C ... +40°C | -20°C ... +40°C | -20°C ... +40°C | -20°C ... +40°C |
| Storage temperature | -25°C ... +85°C | -25°C ... +85°C | -25°C ... +85°C | -25°C ... +85°C |
| Operating humidity | 95%, non condens | 95%, non condens | 95%, non condens | 95%, non condens |
| Live current switching | 100.000 cyles | 100.000 cyles | 100.000 cyles | 100.000 cyles |
| Mechanical | | | | |
| Connections terminal stud | M10 (3/8"-16) | M10 (3/8"-16) | M10 (3/8"-16) | M10 (3/8"-16) |
| Connections stud lenght | 23 mm | 23 mm | 23 mm | 23 mm |
| Maximum terminal Stud Torque | 15.5 NM (140 in-lb) | 15.5 NM (140 in-lb) | 15.5 NM (140 in-lb) | 15.5 NM (140 in-lb) |
| Terminal material | tin-plated copper | tin-plated copper | tin-plated copper | tin-plated copper |
| Enclosure width | 95.25 mm | 95.25 mm | 95.25 mm | 95.25 mm |
| Enclosure height | 138.94 mm | 138.94 mm | 138.94 mm | 138.94 mm |
| Enclosure depth | 51.56 mm | 51.56 mm | 51.56 mm | 51.56 mm |
| Weight | 0.8 kg | 0.8 kg | 0.8 kg | 0.8 kg |
| Drilling mounting centers | 114.3mm * 76.20mm | 114.3mm * 76.20mm | 114.3mm * 76.20mm | 114.3mm * 76.20mm |
| Mounting screws | 4 mm | 4 mm | 4 mm | 4 mm |
| Ingress Protection Class | IP66 | IP66 | IP66 | IP66 |
| Enclosure Colour | RAL9011 Graphite Black | RAL9011 Graphite Black | RAL9011 Graphite Black | RAL9011 Graphite Black |
| Cable clearance | 28.4 mm (1.12') | 28.4 mm (1.12') | 28.4 mm (1.12') | 28.4 mm (1.12') |
| Ignition Protection | SA J1171 | SA J1171 | SA J1171 | SA J1171 |
| Markings | CE, Iso 8846 | CE, Iso 8846 | CE, Iso 8846 | CE, Iso 8846 |



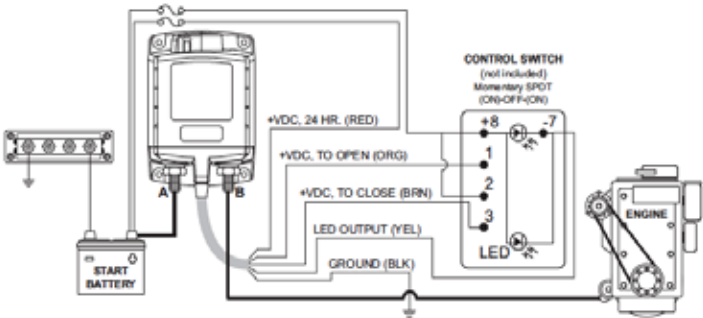
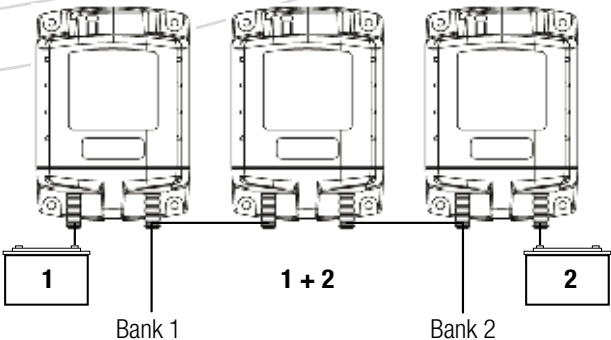
Remote WP-ML & WP-ACR



Remote WP-ML



Remote panel



DC Power Distribution

Charging of individual battery banks

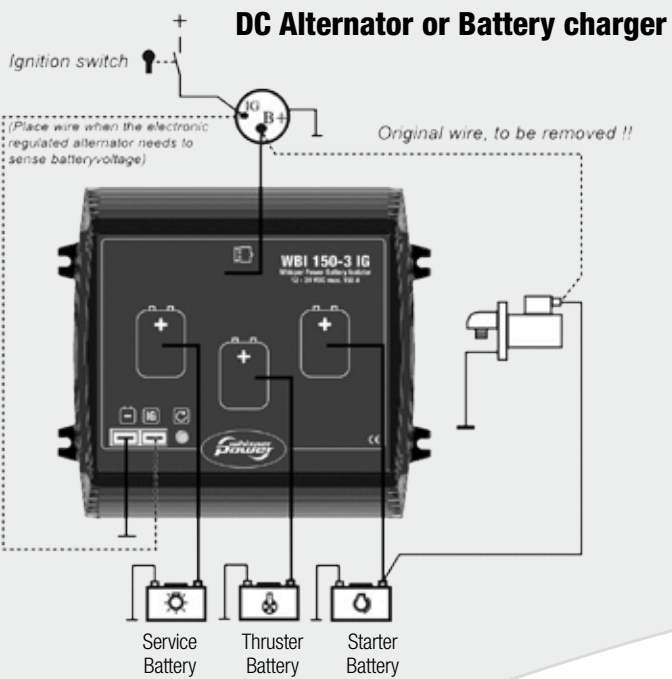
WBI Series – WhisperPower Battery Isolator

Our WBI battery Isolators are designed to charge 2 or more individual batteries or battery banks from one power source: a battery charger or a DC alternator. The WBI is an ideal solution to charge separate battery banks, when the output voltage of a charge device cannot be adjusted to compensate for a voltage drop which occurs when an ordinary battery isolator is being used. The WBI keeps the voltage at the correct charge level.

- For a fast and complete charge of 2 or 3 battery banks
- Extends battery life time considerably
- Up to 150 Amp charge power
- Hardly any voltage loss



| Parameter Art. Nr. | WBI 150-2 IG 60115002 | WBI 150-3 IG 60115003 |
|--------------------------|---|--------------------------|
| Technical specifications | | |
| Number of outputs | 2 | 3 |
| Maximal current | 150 | 150 |
| Nominal system voltage | 12 or 24 VDC | 12 or 24 VDC |
| Input voltage range | 8-30 VDC | 8-30 VDC |
| Voltage drop | 0.0V@10A / 0.1V@20A | 0.0V@10A / 0.1V@20A |
| Insulation to ground | > 500V @ 60Hz | > 500V @ 60Hz |
| Operating temperature | -40.. + 85 C | -40.. + 85 C |
| Conformity | EN 50081-1 (emission) EN 50082-1 (immunity) EN 60950-1 (safety) | |
| Dimensions (l x b x h) | 146 x 85 x 92 mm | 146 x 85 x152 mm |
| Weight | 810 gram | 810 gram |
| Warranty | 2 years | 2 years |



- Features:**
- Compatible with any alternator and/or battery charger - no adjustments needed
 - Ignition contact to be fully compatible with all alternators for external excitation or voltage sensing
 - Low voltage drop over the battery isolator
 - No voltage drop when batteries are fully charged
 - Prevents the current flowing from one battery to another
 - Keeps starter battery fully charged at all times

The WhisperPower low voltage loss battery isolator is the best-in-class solution for charging multiple battery banks simultaneously and is compatible with any type of alternator and/or battery charger. It is designed for use in both existing and new systems without the need for adjustments to the alternator. As the voltage loss between the alternator and battery is negligible, the electronic low voltage loss battery isolator performs far better than conventional battery isolators. This results in fast and complete charging of your batteries.

While conventional battery isolator use diode splitter's with low efficiency, the Whisperpower battery isolator uses electronic technology. This technology ensures that charging continues at the correct voltage level, even with several battery banks.

The Whisper Power Battery Isolators can be used in any application even if the standard alternator needs external excitation or voltage sensing. In this case the standard 'Ignition switch' (IG) contact can be connected.



DC Power Distribution

Battery Combiners/ Battery links

WhisperPower Microprocessor Controlled Battery Link

The WBL Battery Links are devices that automatically connect two battery banks if the voltage rises above a pre-set charge value for at least five seconds, allowing these battery banks to be charged simultaneously. To protect the battery when the voltage drops, the battery banks are isolated once again. Two models are available: the 120A/ max 180A version and a 160A/ 480A version.

Features and benefits

- Simultaneous charging of two batteries
- Intelligent battery monitoring function
- Safe battery connect algorithm
- Additional power boost by start assist function
- Easy to install, no programming required
- Compact and robust



WBL-120

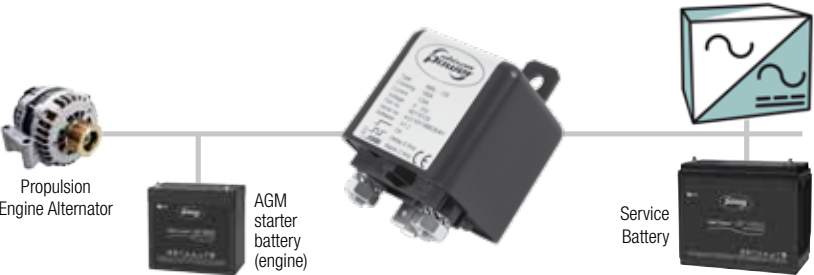
| Parameter Art. Nr. | WBL-120 60110120 |
|--|---|
| Technical specifications | |
| Weight | 125 gram |
| Dimensions (l x b x h) | 46 x 80 x 46 mm |
| Continuous rating | 120 A |
| Cranking rating (10 sec) / inrush rating | 180 A |
| Input voltage | 9-35 VDC |
| Operation temperature | -40 to 65 °C |
| Maximum voltage drop | 0.5 VDC (delay time before disconnect: approx. 10 sec.) |
| Maximum allowed voltage difference | 8.0 VDC |
| Automatic mode | |
| Switch on voltage (minimum) | > 13 V @ 12 V / > 26 V @ 24 V |
| Switch on delay time | 5 sec. |
| Switch on voltage (maximum) | 15.0 V @ 12 V / 30.0 V @ 24 V |
| Automatic drop off voltage | < 12,75 V @ 12 V / < 25,5 V @ 24 V |
| DC drain | |
| OFF mode (solenoid not activated) | 1.0 mA @ 12 V / 1.1 mA @ 24 V |
| ON mode (inrush current) | 0,5 A @ 12 V / 40 mA @ 24 V |
| ON mode (solenoid is activated) | 50 mA @ 12 V / 40 mA @ 24 V |
| Status led | |
| On | Solenoid is activated (ON mode) |
| Slow blinking (0.5 Hz) | Delay time before solenoid will switch on |
| Fast blinking (2.5 Hz) | Alarm: Solenoid is not activated as voltage difference is either too high (> 8.0 VDC) in OFF mode or voltage drop was too high (> 0.5 VDC) during ON mode |
| Compliance | |
| CE | Yes |

Features:

- Automatic battery relay wich connects 2 batterybanks
- Simultaneous charging
- Automatic isolation at drop off voltage
- Remote control switches (option)
- Connect battery banks in parallel for emergency start
- Led indicator

This is a smart, independent and automatic device. For a power boost to the starting power, a start assist contact is available. In this mode a single push of a button connects the extra bank to the main battery bank for assistance of the main bank by the extra bank. The connection will be disconnected after 30 seconds.

The Whisper battery link gives accurate information about the connection link of the batteries. An unlit LED indicates an open relay. When one of the batteries is being charged the LED will start to flash slowly to indicate it is counting to 30 seconds before closing the relay. When closed, the LED will be lit continuously.



WBL-160

| Model | WBL 160 |
|---------------------------------|-----------------------|
| Article no. | 60110160 |
| Battery Separator | 4 c 6 |
| Input | |
| Nominal input voltage | 12/ 24V auto detect |
| Input range, no defects | 7..32V |
| Output | |
| Nominal output voltage | Same as input voltage |
| Piek output Current | 480A |
| Maximum output current 3sec | 240A |
| Continue output current | 160A |
| Continue output current at 40°C | 160A |
| General | |
| Standby current | +/_2mA |
| Operating current 12/24V | 340/170mA |
| Switch on current 12/24V | 340/170mA |
| Ambient operating temperature | -10°C .. +40°C |
| Storage temperature | -25°C .. +85°C |
| IP rating | IP66 |
| Voltage accuracy | 2% |
| Switch on voltage 12/24V | 13,2/26,4V |
| Switch off voltage 12/24V | 12,8/25,4V |
| Switch off voltage fast 12/24V | 11,8/23,6V |
| Switch on delay | 5sec |
| Switch off delay | 60sec |
| Switch delay fast | 4sec |
| Protections | |
| Polaritie proof | Yes |
| Undervoltage | Yes |
| Overvoltage | 16/32V |
| Features | |
| Microprocessor controlled | Yes |
| Undervoltage | Yes |
| Overvoltage | Yes |
| Start help | Yes |
| Led output | Yes |
| Status output | No |
| Status input | Yes |
| Remote off input | No |
| Mechanical | |
| Connection input/output | M8 |
| Connections minus/status/remote | Faston 6,3mm |
| Dimensions (H*W*D) | 58*72*108mm |
| Mounting holes | Dia 6mm 88,5mm |
| Weight | 0,470Kg |
| Cabinet/Collor | Polyurethaan/black |

DC Power Distribution

Battery discharge protection

WhisperPower Battery Isolator / Voltage Guard

The WBI Voltage Guard has been developed to protect the against an unwelcome discharge. As a result, batteries will not break down before the end of the life cycle. The WBI Voltage Guard has to be installed in the DC connection between the battery and the DC consumers. The Voltage Guard is programmable and the desired under-voltage value and over voltage value can be easily selected. Max current 200 amps.

Features and benefits

- Wide voltage range
- Auto voltage selection
- Maintenance free
- Easy to install
- High load capability
- Low power consumption
- Over voltage protection
- Temperature protection



| Parameter Art. Nr. | WVG-200 60110200 |
|----------------------------------|---------------------|
| Technical specifications | |
| Current (continue / intermitted) | 150 / 200 A DC |
| System voltage | 12 or 24 DC |
| Input voltage range | 8 - 31 VDC |
| Measurements (l x b x h) | 145mm x 92mm x 85mm |
| Weight | 580 gram |
| | |
| Low voltage setting 12 V | 9 - 12 VDC |
| High voltage setting 12 V | 15,5 VDC |
| | |
| Low voltage setting 24 V | 18 - 24 VDC |
| High voltage setting 24 V | 31 VDC |
| | |
| The guarantee period is one year | |



Features:

- WPI-VG increases battery life
- WPI-VG prevents discharging of main battery
- Can be used as main battery switch

The Battery Isolator / Voltage Guard is an essential part of a well-equipped battery system ensuring a longer life span for your batteries.

The WBI-VG monitors the optimum condition of your battery system and can also be used as a solid state main battery isolation switch.

The WBI-VG consists of a high current electronic switch capable of switching loads of up to 200 amps. If the battery voltage drops below a previously set value the load will automatically disconnected.

The on-and-off-values are set by the potentiometer on the front of the unit. When any of these set points are reached, a warning LED will light up and in addition an audible alarm will sound. This is to prevent the battery being discharged below a user adjustable preset voltage.

Remote monitoring and operation is possible if the WBI-VG is linked to the main panel. An (built-in) hysteresis allows for a short-term voltage drop caused by switching on a heavy load. The WBI-VG has an extremely low current drain of only 4mA in off-mode.

The Whisper Power Battery Isolator Voltage Guard is the best in class for a well equipped battery system!



Multi purpose DC/DC converters

Essential corner stones for electrical systems

In most electrical systems 24 VDC and 12 VDC equipment is used in a mix. WhisperPower's switched-mode DC / DC converters are designed to convert a certain DC voltage, i.e. 24 VDC, to another DC voltage, i.e. 12 VDC. WhisperPower Switched Mode technology ensures a minimal energy loss and the highest output quality. We offer three different topologies:

MC-Series

- DC-DC converters with common ground (shared DC negative)
- Step down from 48 to 24, or 24VDC to 12VDC
- Electronic technology, highly efficient, no warming up of the environment
- Power rating of up to 30Amps



MG-Series

- DC-DC converters with galvanic isolation
- Step down from 48VDC to 24, or 24VDC to 12VDC
- Step up from 12 to 24VDC is also feasible
- Electronic technology, highly efficient, no warming up of the environment
- Power rating of up to 30 Amps
- Can be put in parallel to operate high demand appliances



MCC-Series

- DC-DC converter with current limitation
- Designed to step down 24VDC and charge a 12VDC battery
- Multi step charge characteristic, programmable
- Delivered with a temperature sensor as standard
- Can be used as a dimmer for DC lights



Features and benefits

- Minimal any energy loss due to switched-mode technology applied. (> 90% efficient)
- Industrial, high class design giving a high reliability and the longest life cycle
- Silent - no humming, just temperature controlled fan's for cooling
- No interference or disturbance of radio, VHF and other sensitive equipment
- Compact, quick and easy to install.
- Best price/ performance ratio



Photograph: Courtesy of Corina Yachts

DC-DC converters • MC series



| Model DC/DC Article no. | MC 24/12-30 60110012 | MC 24/12-20 60110011 | MC 24/12-12 60110016 | MC 24/12-08 60110010 | MC 12/24-10 60110017 |
|---|--|-------------------------|-----------------------------------|-------------------------|--------------------------------|
| Converter type | step down and voltage stabilizing | | step down and voltage stabilizing | | step up an voltage stabilizing |
| Input | | | | | |
| Nominal input voltage | 24 VDC | 24 VDC | 24 VDC | 24 VDC | 12 VDC |
| Input range, full output specifications | 18..35 VDC | 18..35 VDC | 18..35 VDC | 18..35 VDC | 9..18 VDC |
| Input range, no defects | 0..35 VDC | 0..35 VDC | 0..35 VDC | 0..35 VDC | 0..18 VDC |
| Output | | | | | |
| Nominal output voltage | 13.8 VDC | 13.8 VDC | 13.8 VDC | 13.8 VDC | 25.0 VDC |
| Voltage adjustment | none | none | none | none | none |
| Output accuracy | 1% | 1% | 3% | 3% | 3% |
| Output voltage ripple, peakpeak | 1% | 1% | 1% | 1% | 3% |
| Maximum output power | 490 W | 350 W | 170 W | 110 W | 300 W |
| Continue output power | 420 W | 280 W | 170 W | 110 W | 250 W |
| Maximum output current | 35 A | 25 A | 12 A | 8 A | 12 A |
| Continue output current at 40°C | 30 A | 20 A | 12 A | 8 A | 10 A |
| General | | | | | |
| Efficiency | >92% | >92% | >92% | >92% | >93% |
| No load consumption | <25mA | <25mA | <5mA | <5mA | <5mA |
| Ambient operating temperature | -10 C .. +40 C | -10 C .. +40 C | -10 C .. +40 C | -10 C .. +40 C | -10 C .. +40 C |
| Storage temperature | -25 C .. +85 C | -25 C .. +85 C | -25 C .. +85 C | -25 C .. +85 C | -25 C .. +85 C |
| Operating humidity | 95% max, non-condensing | | 95%, non-condens | | 95%, non-condens |
| Galvanic insulation | Common negative | Common negative | Common negative | Common negative | Common negative |
| Cooling concept | Forced ventilation | Natural convection | Natural convection | Natural convection | Natural convection |
| Protections | | | | | |
| Overcurrent / short circuit | limited by current sensing | | Yes / Fuse | Yes / Fuse | Yes / Fuse |
| Over heat, shutdown | limited power by temperaturesens | | None | None | None |
| Mechanical | | | | | |
| Connections input/output, Faston max wire | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² |
| Enclosure Dimensions (HxWxD) | 50x151x88mm | 50x126x88 | 50x98x88 | 50x98x88 | 50x126x88 |
| Mounting holes footprint | dia 4 mm 58x143 | dia 4 mm 58x118 | dia 4 mm 58x90 | dia 4 mm 58x90 | dia 4 mm 58x118 |
| Weight | 500 gr | 440 gr | 290gr | 270 gr | 360 gr |
| Protection class | IP20 | IP20 | IP20 | IP20 | IP20 |
| Enclosure no. | frame 6 | frame 5 | frame 4 | frame 4 | frame 5 |
| Enclosure Material | Anodized alu, ABS end covers | | Alu / ABS | Alu / ABS | Alu / ABS |
| Enclosure Colour | Black RAL 9011 | Black RAL 9011 | Black RAL 9011 | Black RAL 9011 | Black RAL 9011 |
| Comply to the following standards | EN61000-6-3 (EN55022), EN61000-6-2 (EN61000-2/3/4, EN61000-4-3), LVD 73/23/EEC (EN60335-1), e4-95/54/EC, RoHS 2002/95/EC Note: the given specifications are subject to change without notice. | | | | |

FEATURES

- 24V input, 12V output step down conversion, for use of your 12V equipment on 24V batteries.
- Common ground versions
- Excellent voltage stabilization, ensuring safe use of the appliances
- Compact and high efficient energy saving technology

ADDITIONAL MODELS:

Capability to charge the secondary battery (GEL AGM, wet)

DC-DC converters • MG series • full Galvanic Isolation input/output



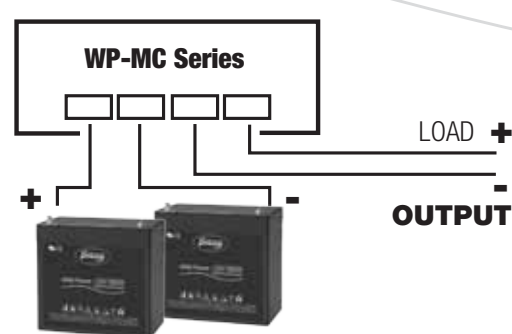
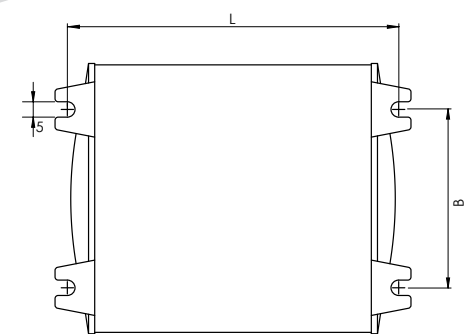
| Model DC/DC Article no. | MG 24/12-30-i 60110021 | MG 24/12-16-i 60110020 | MG 48/12-30-i 60110023 | MG 48/12-08-i 60110024 | MG 24/24-15-i 60110025 |
|---|--|---------------------------|--------------------------------------|---------------------------|--------------------------------------|
| Converter type | stepdown and voltage stabilizing | | stepdown and voltage stabilizing | | step up and voltage stabilizing |
| Input | | | | | |
| Nominal input voltage | 24 VDC | 24 VDC | 48 VDC | 48 VDC | 24 VDC |
| Input range, full output specifications | 20..35 VDC | 20..35 VDC | 30..60 VDC | 30..60 VDC | 20..35 VDC |
| Input range, no defects | 0..35 VDC | 0..35 VDC | 0..70 VDC | 0..70 VDC | 0..35 VDC |
| Output | | | | | |
| Nominal output voltage | 12.5 VDC | 12.5 VDC | 12.5 VDC | 12.5 VDC | 24.5 VDC |
| Voltage adjustment | yes | yes | yes | yes | yes |
| Output accuracy | 3% | 3% | 3% | 3% | 3% |
| Output voltage ripple, peakpeak | 1% | 1% | 1% | 1% | 1% |
| Maximum output power | 400 W | 200 W | 400 W | 200 W | 400 W |
| Continue output power | 360 W | 200 W | 360 W | 100 W | 360 W |
| Maximum output current | 32 A | 16 A | 32 A | 16 A | 16 A |
| Continue output current at 40 C | 30 A | 16 A | 30 A | 8 A | 15 A |
| General | | | | | |
| Efficiency | >87% | >87% | >87% | >87% | >87% |
| No load consumption | <25mA | <25mA | <25mA | <25mA | <25mA |
| Ambient operating temperature | -10 C .. +40 C | -10 C .. +40 C | -10 C .. +40 C | -10 C .. +40 C | -10 C .. +40 C |
| Storage temperature | -25 C .. +85 C | -25 C .. +85 C | -25 C .. +85 C | -25 C .. +85 C | -25 C .. +85 C |
| Operating humidity | 95%, non-condens | 95%, non-condens | 95%, non-condens | 95%, non-condens | 95%, non-condens |
| Galvanic insulation | YES, 500 VAC | YES, 500 VAC | YES, 500 VAC | YES, 500 VAC | YES, 500 VAC |
| Cooling concept | Forced ventilation | Forced ventilation | Forced ventilation | Forced ventilation | Forced ventilation |
| Protections | | | | | |
| Overcurrent / short circuit | limited by current sensing | | limited by current sensing | | limited by current sensing |
| Over heat, shutdown | limited power by temperature sensing | | limited power by temperature sensing | | limited power by temperature sensing |
| Mechanical | | | | | |
| Connections input/output, Faston max wire | 6mm ² | 6mm ² | 6mm ² | 6mm ² | 6mm ² |
| Enclosure Dimensions (HxWxD) | 83x186x133 | 50x176x88 | 83x186x133 | 50x151x88 | 83x186x133 |
| Mounting holes footprint | dia 4 mm 91x177 | dia 4 mm 58X168 | dia 4 mm91x177 | dia 4 mm 58X143 | dia 4 mm91x177 |
| Weight | 1,4 kg | 630 gr | 1,4kg | 630 gr | 1,4 kg |
| Protection class | IP20 | IP20 | IP20 | IP20 | IP20 |
| Enclosure no. | frame 8 | frame 7 | frame 8 | frame 6 | frame 8 |
| Enclosure Material | Anodized aluminium, ABS end covers | | Anodized aluminium, ABS end covers | | Anodized aluminium, ABS end covers |
| Enclosure Colour | RAL 9006 | Black, RAL 9011 | RAL 9006 | Black, RAL 9011 | RAL 9006 |
| Comply to the following standards | EN61000-6-3 (EN55022), EN61000-6-2 (EN61000-2/3/4, EN61000-4-3), LVD 73/23/EEC (EN60335-1), e4-95/54/EC, RoHS 2002/95/EC Note: the given specifications are subject to change without notice. | | | | |

FEATURES

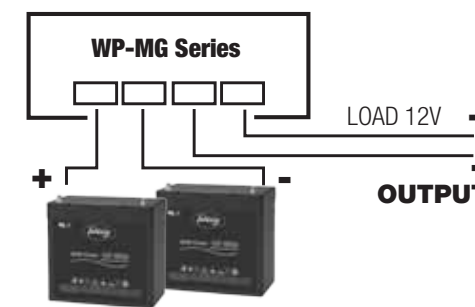
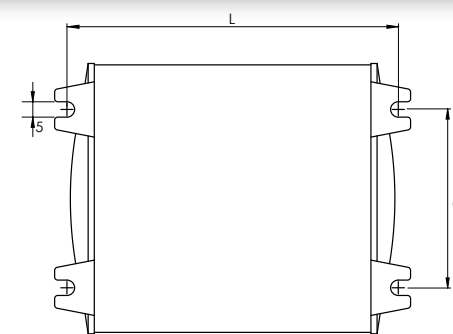
- 24V input, 12V output step down conversion, for use of your 12V equipment on 24V batteries.
- Galvanic isolated versions
- Excellent voltage stabilization, ensuring safe use of the appliances
- Compact and high efficient energy saving technology

ADDITIONAL MODELS:

Capability to charge the secondary battery (GEL AGM, wet)



Read about our
DC-DC MCC go to
whisperpower.com



The **future** is now

WhisperPower has become an important player in this exciting market. We have proven our ability to supply turn-key hybrid solutions from small craft up to superyachts. Pre-engineering, engineering, manufacturing of complete systems, and commissioning - this is our passion and it is what we are good at. Based on our experience, we see power and propulsion systems becoming more and more integrated and we it makes sense to use diesel engines for not only power generation but also propulsion and manoeuvring. Within our range, we have products to suit two different application requirements.

Small Craft Electrical Systems with or without diesel - 48VDC

For yachts and vessels from 6 - 14 metres, we offer our 48VDC based systems, with a maximum power per electrical propulsion engine of appr. 12kW. We provide these systems as 'electrical only' or as a 'diesel- electric hybrid' configuration and includes our Genverter or fixed rpm generator, operating as a range extender. These systems can be composed from standard components, selected from this catalogue. A separate catalogue will be available soon showing all mechanical parts such as electric motors, pods, sail drives and related controls, in detail. Go to page 96

'Big Boat' Electrical Systems

WhisperPower offers owners and designers a perfect made-to-measure solution for yachts or professional craft from 20 metres and up.

- We design and engineer in close collaboration with owner's representative, yacht architect and the boat builder.
- We use partially already engineered system parts.
- We customize where necessary.

Go to page 98 for more details



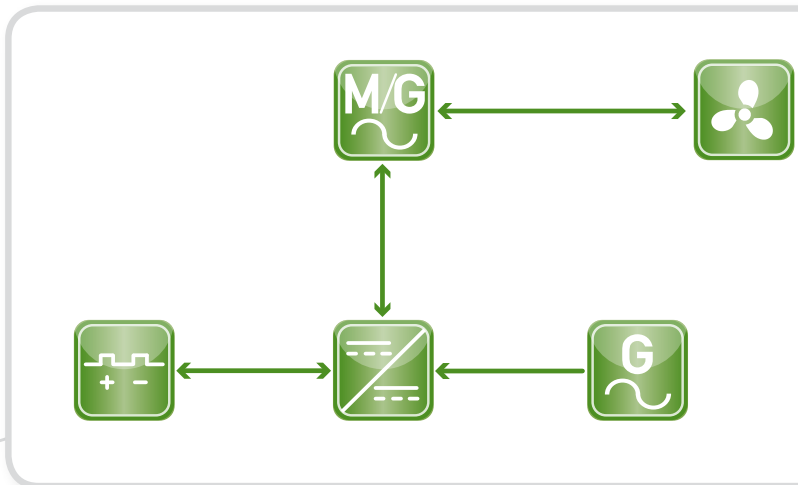
Photograph: Courtesy of Mart, the Netherlands

Small craft electrical navigation systems

Two main system variations explained;

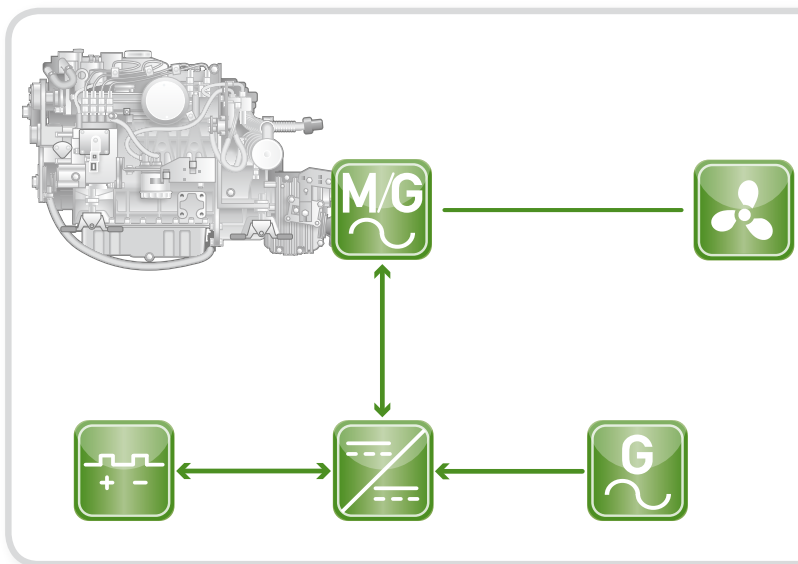
Serial Hybrid • Direct drive/ on shaft

- Serial hybrid propulsion up to 25kW per electrical motor (up to 12 kW off the shelf)
 - Lithium-Ion or GEL battery banks (up to 48V 1000Ah off the shelf)
 - DC Power Cube or WPC Power Centre charge stations (off the shelf)
 - Shore-to-ship charging/ shore power support (also 50 - 60Hz vv frequency conversion)
 - Genverter/ Generator Range Extender up to 25 kW (off the shelf)
- Go to page 96



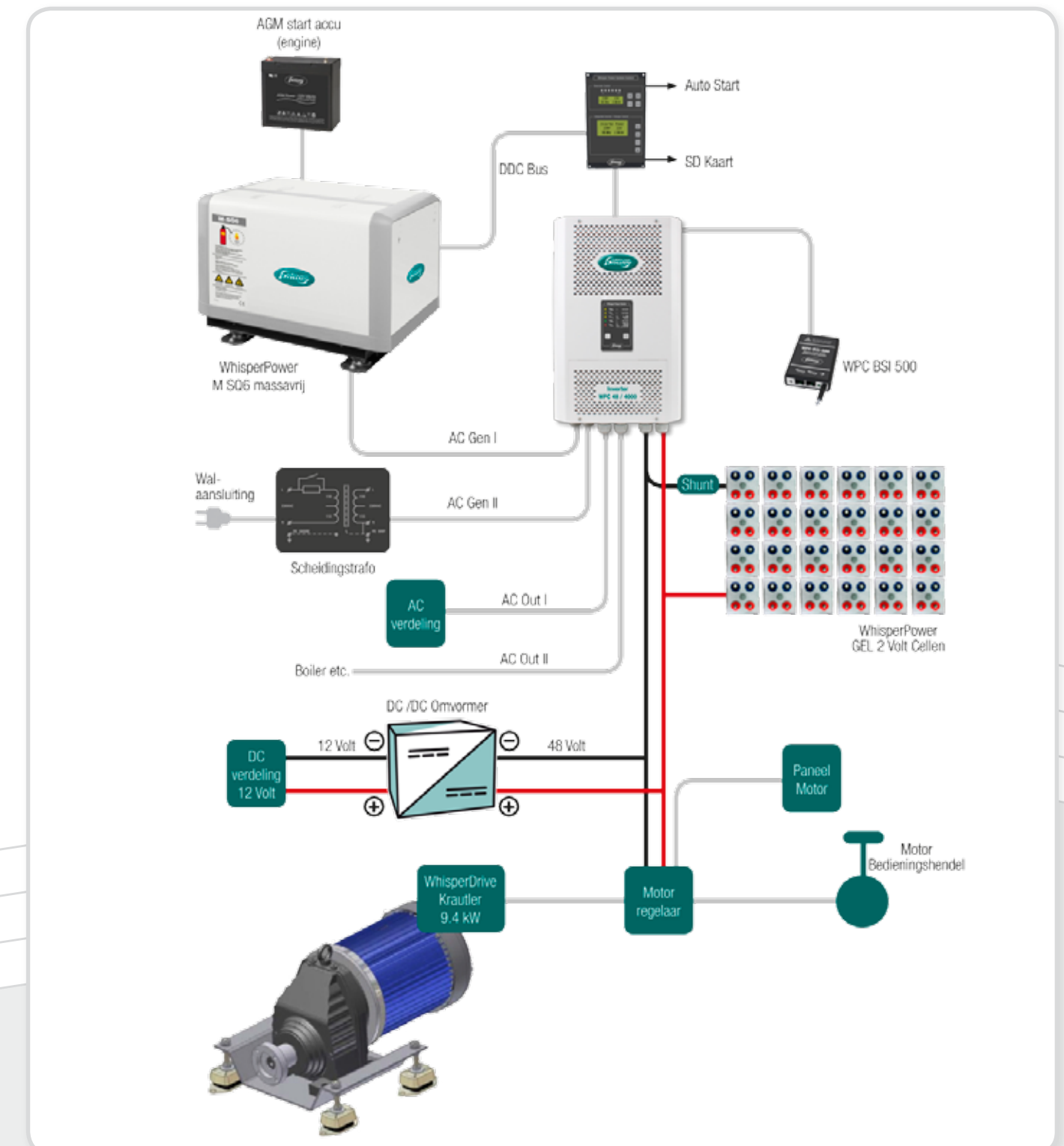
Parallel Hybrid

- Integration of propulsion and power generation in the drive train up to 25kW (custom)
- Shaft alternator for power generation up to 25kW (custom)
- System completion utilizing Steyr HDS propulsion (for example)



Small craft electrical navigation systems

- 10kW direct drive shaft motor
- 2V GEL - 600Ah / 48VDC WhisperPower Battery
- WPC Shore to ship charger/ sine wave inverter
- WhisperPower SQ 6 range extender
- WhisperPower bus system with combined control
(Alternative: use Genverter/2 and DC PowerCube)



Hybrid systems for superyachts and light commercial vessels

The power of integration

Our Hybrid propulsion and power systems generate, store, use, exchange and control onboard energy in an independent and integrated way. Our portfolio comprises of three main system solutions:

Power generation by Genverter

- We build extremely compact, silent and vibration proof power packs from 50kW - 500kW
 - These GENVERTER power packs can be paralleled without the need to install expensive electronics. (as they are high power DC)
 - The GENVERTER reacts on the AC and DC load demand
 - Reduced generator running time and correct loading of the Genverter engine
 - Fixed running of the generator no longer needed - the optimum rpm can be selected
 - Peak power is provided by the connected Lithium-Ion battery bank and power electronics (peak shaving)
- Go to page 100

Power generation by shaft generator

- Based on our High Efficient compact PM technology, we supply 50kW shaft generators for large Sailing Yachts
- Re-generation technology provides free of charge electricity during sailing
- Hy- Shaft system is connected to the central GENVERTER/ Li-ion battery system



Shaft alternator 50kW

50kW variable speed generator, 65kW intermittent



Photograph: Courtesy of Royal Huisman Shipyard, the Netherlands

Hybrid power and propulsion for combine

- PM Permanent Magnet motors for parallel or serial configuration
- Power rating from 50kW - 500kW
- GENVERTER variable speed PM based generators from 25kW - 500kW - units can be used in parallel
- Optional PTO for Hydraulic Systems on board as part of the GENVERTER supply
- Lithium-Ion batteries with integrated BMS
- Battery chargers/ converters – all-water cooled
- Shore power connection systems including frequency conversion mode
- High power DC to AC inverters, all-water cooled
- Shaft alternators PM-style, all-watercooled, 50kW
- Extended power management and monitoring



PLC based power management and monitoring for Hybrid systems

Nick Haley, captain on board of Rainbow:

'These guys from WhisperPower really care: in case you need them they are available, right away, without restrictions..'



Green Power and Propulsion System for 40 mtr Yacht

Functional Diagram

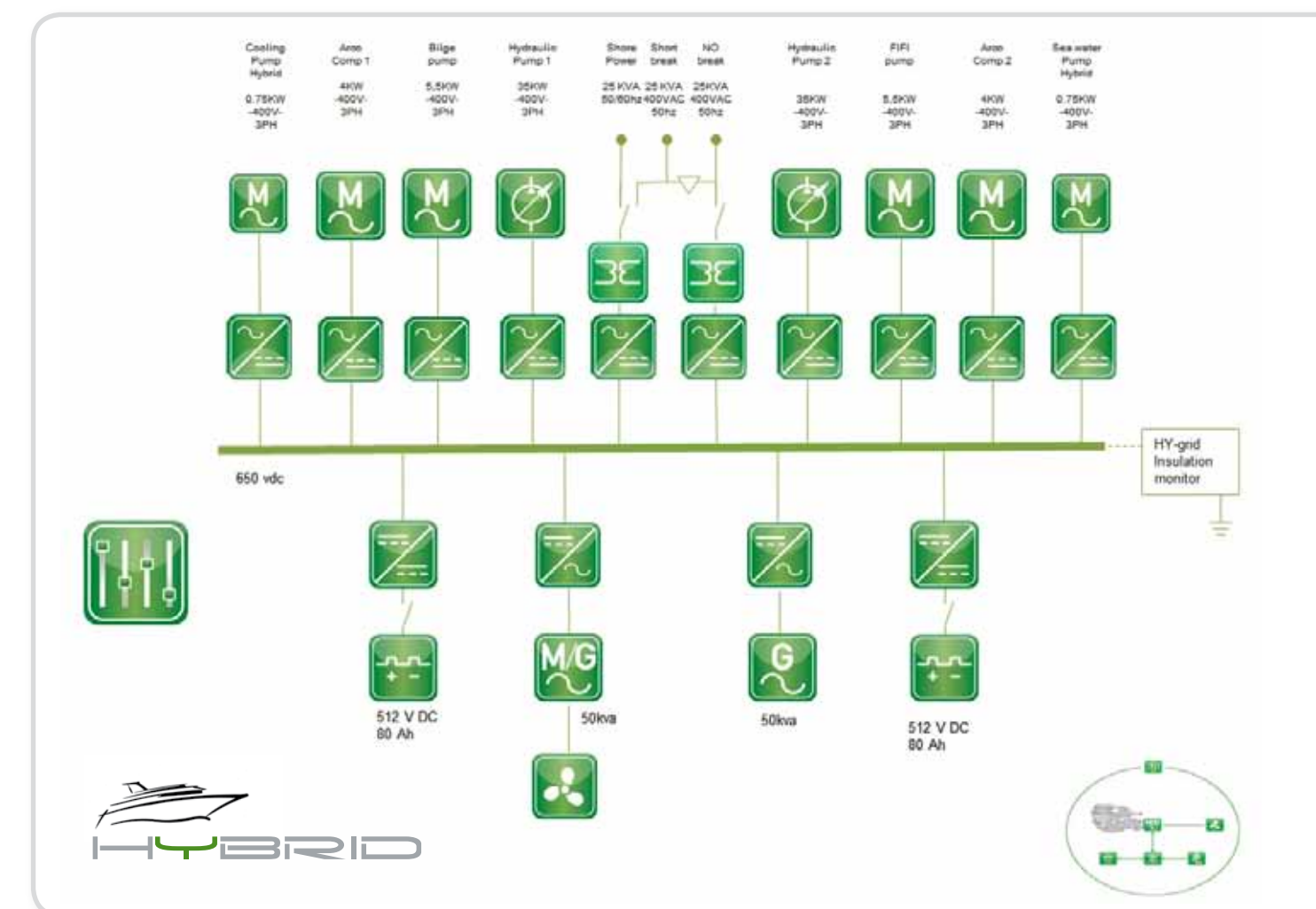


Diagram of system supplied to Rainbow,
40 mtr J-Class. 2011

The WhisperPower high-tech propulsion system on J-Class yacht Rainbow has been awarded the top design and technology prize at the Showboats Design Awards 2013 held in May 2013, during a ceremony in Monte Carlo.

Following a unanimous decision, the WhisperPower system onboard of SY Rainbow was announced as the winner of the Design and Technology category. This hybrid power and propulsion solution meets the power and space needs of a modern J-Class project.



Delivered anywhere, at any time

WhisperPower Service & Support

WhisperPower's service and support goes way beyond production and sales. We remain responsible for our products, systems and accessories, providing all necessary service and support before, during and after your purchase. This ranges from system recommendations and installation to first class service for maintenance and repairs.



Bespoke system advice

Our engineers and advisors have a wealth of experience in the development and realisation of electrical power systems and are always available to help you plan your own. This includes installing a genset or genverter and more complex systems. Our designers will ensure the ideal set-up and a system with optimal efficiency, even when combining your generator system with fuel cells or solar or wind generator power.

Global sales & distribution network

The growing network of WhisperPower dealers and distributors covers the world. Our international brand is locally represented by

companies including bodywork manufacturers, shipyards, electrical and mechanical contractors and sector specific companies. Their trained specialists and professionals are available for servicing mobile, marine or domestic applications.

Commissioning and system set-up

Whenever possible, WhisperPower's technical team will take care of commissioning of your power system as soon as it is delivered. In several countries this service is included in our product offering. This ensures that your system is installed in accordance with the right guidelines and conditions. Contact us for more information about the terms and conditions.

Our starting point: On-site service

The representatives in our network will provide you with service and technical support in case

of repairs or malfunctions. Where possible they will help you on site, wherever you may be in the world.

24/7 Hotline for Service & Support

Our technical service is available in case of malfunctions or repairs. Contact us directly 24/7 from anywhere in the world via the international WhisperPower Hotline Service & Support line on +31 512 571 555. We will provide support ourselves where possible, or put you in contact with our local representative.

Periodical training: Up-to-date expertise

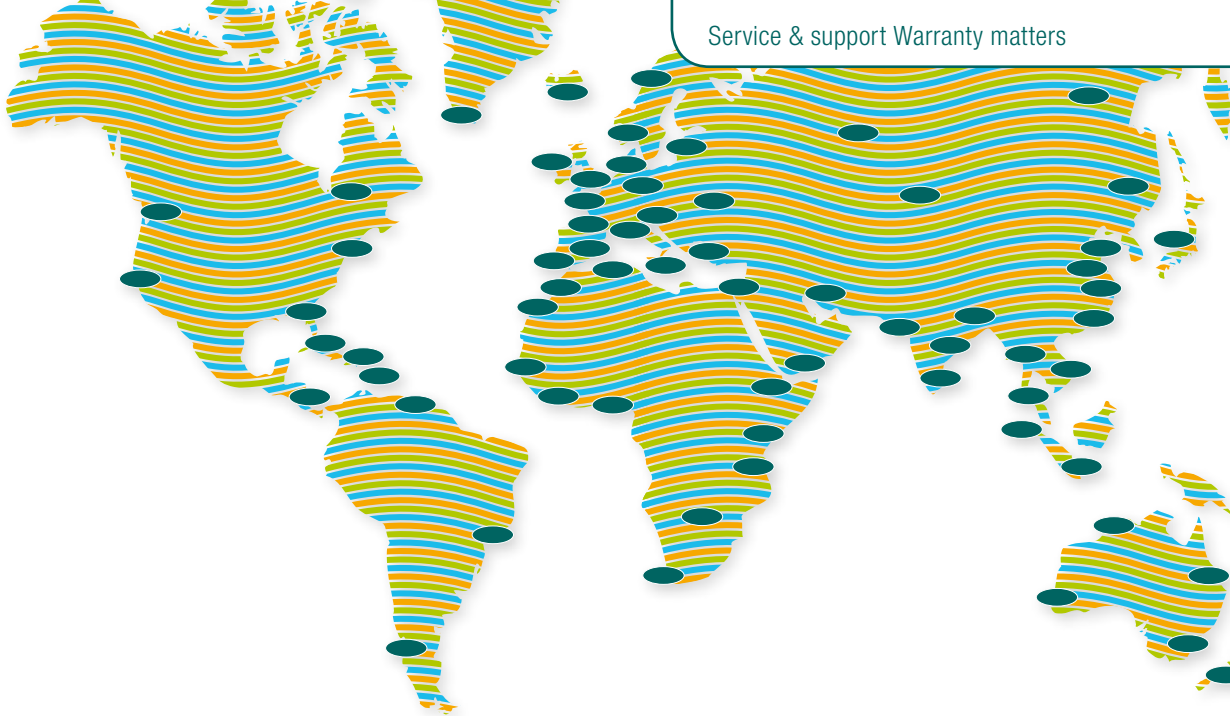
Expertise is the foundation for the best service. Every WhisperPower representative has up-to-date knowledge and the benefit of our global experience. Via periodical training courses we ensure our specialists have the latest information on installations and applications as well as our product range. As a result you are guaranteed that WhisperPower offers more than product and packaging: We offer you our expertise as standard.

Minimal downtime during repairs

If necessary, WhisperPower will carry out repairs or maintenance of our products at another location, in a regional workshop or at our head office. In most cases you will be provided with a replacement solution to ensure that your system downtime is kept to a minimum.

Up-to-date product specifications

Detailed specifications of the WhisperPower products are available on our website and in brochures and manuals. As we are continuously improving our products, specifications are subject to change without notice.



Long-term peace of mind

The WhisperPower WarrantyPlan

When purchasing our products and systems, you always have the certainty of a dedicated WhisperPower WarrantyPlan. This plan covers as standard the costs of repairs and/or replacement of defective parts when products are used in 'normal' circumstances. The conditions for the WhisperPower WarrantyPlan are specific to the product and the use thereof in your system. The standard warranty term for equipment is two years. With an authorised system installations maintenance contract, the warranty term is extended to five years.

With sales in over 50 countries we make sure our distributors, dealers and installers serve you well;

- Extended system advice
- Selection of the right parts
- Installation of the system or generator
- Commissioning after installation
- Maintenance training
- Repair in case of a defect
- Software updates, when needed

All our efforts are aiming to reduce unnecessary downtime.



Order: sales@whisperpower.com • [marine](#) • [mobile](#) • [autonomous/land](#) • www.whisperpower.com

References

WhisperPower’s history is going back to 1998, when the company was founded as a generator design and manufacturing company. Since 2007 , the range of products has increased dramatically, which is reflected in this new WhisperPowerBook. WhisperPower has become a full service ‘system supplier’, with one of our many WHISPER generator models as a reliable cornerstone to the electrical system. We are pleased to present you our actual list of references, which is just a selection out of our customer list.

- Altena Yachting, the Netherlands

Alla Yachts, Turkey

Alu-Bat S.A., France

Aluboot, the Netherlands

Ancora Werft, Germany

Aqua Star Workboats, UK

Aquanaut, the Netherlands

Atelier Outremer, France

Baltic Yachts, Finland

Batbryggeri A. Andersson, Sweden

Batsnickarna Orust AB, Sweden

Bella Boats, Finland

Beneteau, France

Berthon Boat Company, UK

Bluewater Yachts, Taiwan

Bruijs Jachtbouw, the Netherlands

Bucklers Hard Yachtbuilders, UK

B. v d Hooven, the Netherlands

Camper & Nicholson, UK

Cantieri del Pardo, Italy

Cantieri Navale Franchini, Italy

Cantieri Se Ri Gi, Italy

Cantieri Navali di Lavagna, Italy

Cantieri Sangermnai, Italy

Catana, France

Chantiers Jeanneau, France

Consonant Yachts, the Netherlands

Construcion Navale Bordeaux, France

Contest, the Netherlands

C-Yacht, the Netherlands

De Alm Jachtbouw, the Netherlands

Damen Shipyards, the Neterlands
- De Boarnstream, the Netherlands

De Drait, the Netherlands

De Gier, the Netherlands

Dehler, Germany

Efes Yacht, Turkey

Elan, France

Erlandssons Brygga, Sweden

Fairlie Restaurations, UK

Ferretti Craft, Italy

Flevo Jachtbouw, the Netherlands

Fountaine Pajot, France

Gruno Yachts, the Netherlands

Grouwster Vlet, the Netherlands

Hallberg – Rassy, Sweden

Hanse Yachts, Germany

Hardy, UK

Holland Jachtbouw, the Netherlands

Holterman Yachting, the Netherlands

Hutting Yachts, the Netherlands

Jachtbouw F van der Werf, the Netherlands

Jachtwerf B. de Groot, the Netherlands

Jachtwerf Klaassen, the Netherlands

Jacobssons Batbyggen AB, Sweden

Jetten Yachting, the Netherlands

K & M Yachtbuilders, the Netherlands

Kuipers Woudsend, the Netherlands

Lakey Verf, Russia

Linssen Yachts, the Netherlands

Malo Yachts, Sweden

Marex, Norway

Moonen Shipyard, the Netherlands

Morris Yachts, USA

Mulder Shipyard, the Netherlands
- Najad, Sweden

Nimbus Boats, Sweden

Noordkaper, the Netherlands

Northshore Yachts, UK

Nautor OY, Finland

Osprey, the Netherlands

Oyster Marine, UK

Pacific Shipyard, the Netherlands

Pendennis Shipyard, UK

Piper Boats, UK

President Yachts, Taiwan

Privateer Yachts, the Netherlands

Rego, the Netherlands

Regal, USA

Re-line yachts, the Netherlands

Roda Yacht, Turkey

Rodman, Spain

Siltala Yachts, Finland

Smelne, the Netherlands

Steeler, the Netherlands

SYS, UK

Sturier Yachts, the Netherlands

Tarquin Yachts, UK

Targa, Finland

Vennekens, Belgium

Volharding, the Netherlands

Vri-jon, the Netherlands

Wally Yachts, Monaco

Wim vd Valk Yachts, the Netherlands

Windboats, UK

Windy, Norway

X-Yachts, Sweden

References (China)

遍步全球的服务和配送网络

- Blue Bay Yacht

King Bay Yacht

Sunquest Marine Ltd

Zhoushan Alpha Yacht

Green Island marine(Ningbo)

Zhejiang Millennium Marine Ltd

Shanghai Luck Yacht Manufacture Co. Ltd

Shanghai New Star Yacht

Zhuhai Maxi marine

Zhuhai Jet Tern Marine

Shenzhen Famova Yacht

Poly Marine Marine & Engineering Co.

Zhongshan Dafeiyang Yacht

Hainan Genesis Yacht

Xiamen Hansheng Yacht

Fuzhou Allegro Yacht

Suzhou Activa Marine

NanChang Royaler Yacht

Suzhou Xingma Yacht

Changzhou FRP Yacht

Suzhou Dehong Yacht

Suzhou Mercury Club & Marine Co.;Ltd

Dalian Hengda Marine

Product standards, approvals and certificates

WhisperPower's main manufacturing location is situated in Drachten, Friesland, the Netherlands. All our operations have been set-up according to ISO 9001-2008 standards. A substantial part of our WhisperPower diesel generators is certified to national standards like Chinese and Russian Marine Approvals, as a result of strict investigation procedures like audits to the factory for compliance by third party officials.

Russian River Register Type Approval

Russia has become an important market for WhisperPower products. It is obligatory for vessels, products and parts sold in this region to carry Russian River Register approvals. This federal institution is responsible for the classification of vessels including pleasure craft. We are proud our products are in full compliance with the requirements of this institution.



Russian River Register Type Approval



Invironmental protection agency



Lloyd's register quality assurance ISO9001

CHINA Type Approval ZC

CHINA (PRC) is another emerging market for WhisperPower. Similar to the Russian Market, products sold should comply with Chinese Type Approval ZC. ShanghaiWhisperPower has coordinated the certification of all power generation products.

Type approvals

Classification institutes like Lloyds Register, DNV, Germanischer Lloyds and ABS set safety and environmental standards for the design, construction and operation of ship and yachts. All our power generation and power electronics with Green label can be certified according to a required official Regulation. In general, an individual Type Approval is not included in the standard pricing.

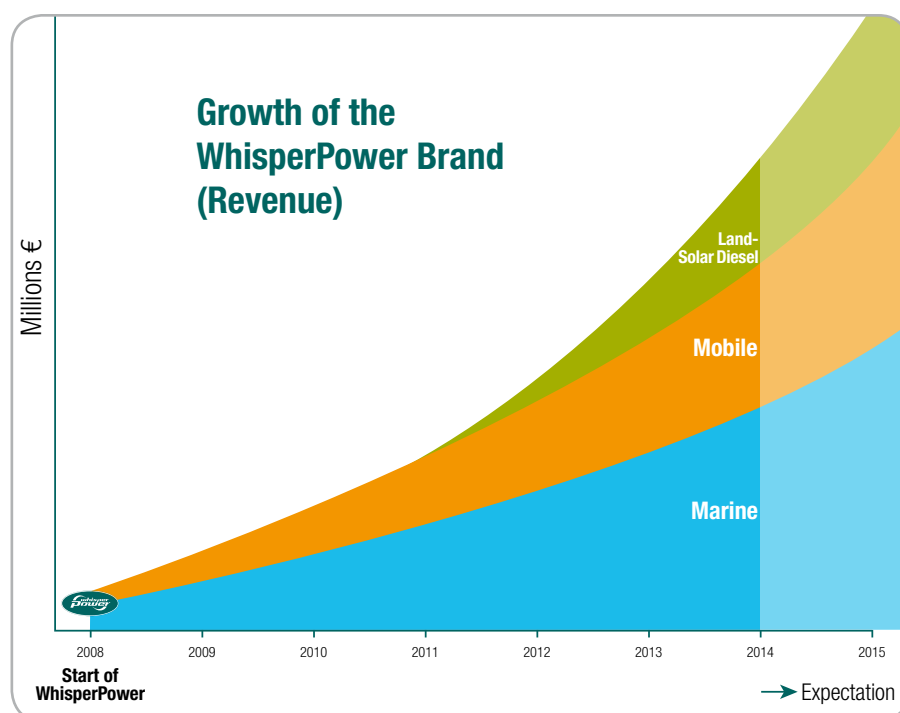
CHINA Type Approval



WhisperPower

Complete Power System specialist

WhisperPower, specialists in supplying complete SYSTEMS, is one of the leading power companies in the world. The company is renowned of it's small Whisper diesel generators, introduced in 1998. In spite of the global stagnation in the various markets, WhisperPower has experienced a strong growth over the past 5 years, with established distribution in over 50 countries and offices in various countries in Europe, China and North America.



From professionals to consumers and 'boxes' to 'systems'

Our product portfolio can be differentiated as follows:

- Our low-entry label for the consumer market, the ORANGE label. Equipment with this label is intended for applications in a consumer environment and for light-industrial applications with simple and practical installation, operation, monitoring and service at very attractive costs
- Equipment and systems carrying the GREEN label are designed for recreational and commercial applications - the perfect products to compose 'custom systems'. Our equipment can be provided with a specific class certification such as Lloyds Register, DNV, etc



'We provide total power solutions for trucks and mobile objects, in case they require extra power.'

Go to www.whisperpower.com/product/mobile-applications

- Custom built 'specials' These are products designed and built according to customer requirements as one-offs or for series production. Take for example our high power hybrid systems and products for navy use

Multiple market approach

We are passionate about our position and future opportunities in the marine business fields. With the aim to enhance economies of scale, we have also successfully explored two more markets: the global recreational and commercial mobile sector and application fields for independent power systems on land. By integrating renewable energy sources, such as solar and wind power, we are able to reduce operational costs and emissions.



'WhisperPower's Grid Independent is designed to operate electrical appliances in houses and small buildings in combination with solar modules.'

Go to www.whisperpower.com/market/solar-back-up-power

Company values

- Respecting people and the environment
- Contributing to a better world with sustainable and energy-saving products
- Developing high-quality products at a fair price
- The Customer is always right
- We exceed expectations
- Innovation is an ongoing process and part of the DNA of our company

Whisper-silent
with low emissions



Whisperpower branch-office's

China

Shanghai WhisperPower System Co. Ltd.
No. 185, Jiaoji Road, B-1F
Putuo District, Shanghai, China

C: Oscar Hu
T: +86 216 076 299 6
F: +86 216 076 299 7
E: oscarhu@whisperpower.com

Germany

WhisperPower Germany
Lallewehrstrasse 7, 26723
Emden, Germany

C: Ansgar Hinrichs
T: +49 151 157 590 10
W: www.whisperpower.nl
E: ahinrichs@whisperpower.eu

Netherlands

WhisperPower BV (head office)
Kelvinlaan 82
9207 JB
Drachten
Netherlands

T: +31 512 571 565
F: +31 512 571 599
W: www.whisperpower.nl
E: sales@whisperpower.nl

Portugal

WhisperPower Iberica SL
Av. Jaume I, 31
46714 Palmera
Valencia, Spain
Portugal

C: Patricio Blanco
T: 34 962 840 358
F: +34 962 840 358
M: +34 608 733 369
E: pblanco@whisperpower.com

Russia

WhisperPower Russia LLC
14, Obvodny emb.
192019, ST Petersburg
Russia

C: Alex Magdiev
T: +7 812 448 8027
F: +7 812 335 9894
M: +7 950 033 6055
W: www.whisper-power.ru
E: a.magdiev@whisper-power.ru

Spain

WhisperPower Iberica SL
Av. Jaume I, 31
46714 Palmera
Valencia, Spain

C: Patricio Blanco
T: +34 962 840 358
F: +34 962 877 045
M: +34 608 733 369
W: www.whisperpower.es
E: pblanco@whisperpower.com

Taiwan

Shanghai WhisperPower System Co. Ltd.
No. 185, Jiaoji Road, B-1F
Putuo District, Shanghai, China
Taiwan

C: Oscar Hu
T: +86 216 076 299 6
F: +86 216 076 299 7
E: azhu@whisperpower.com

United Kingdom

WhisperPower UK (General Sales office)
Revolution House, 43 Brackley Way, Totton
SO40 3HP
Southampton, Hampshire
United Kingdom

C: David Payne
T: +44 (0)2380 868 232
W: http://www.whisperpower.co.uk/
E: dpayne@whisperpower.com

USA

WhisperPower USA
4700 SW 51St Street
FL 33314, Davie
USA

C: Rudolf Mes
T: +1 888 423 266 4
F: +1 954 331 453 2
W: www.whisperpower.us
E: sales@whisperpower.us

Whisperpower Distributors

Australia

WhisperPower Australia - McIntyre Equipment
33 Stone Street, QLD 4053
STAFFORD, Australia

C: Rob McIntyre
T: + 61 7 3356 9808
F: + 61 7 3356 9818
W: www.mcintyre-equipment.com.au
E: rob@mcintyre-equipment.com.au

Belgium

Service Power
Boterhamvaartweg 2
BE 2030, Antwerpen
Belgium

C: Marcel de Winter
T: +32 354 640 86
F: +32 354 640 89
E: power@servicepower.be

Bosnia and Hercegovina

Stal d.o.o.
Tbilisjska ulica 89, 1000
LJUBLJANA - Slovenia
Bosnia and Hercegovina

C: Miran Grom
T: +386 1 423 35 40
F: +386 1 423 51 67
M: +386 4171 7852
W: www.stal.si
E: miran@stal.si

Canada

Britmar Marine Ltd.
102-2433 Dollarton Hwy., V7H 0A1
North Vancouver, B.C., Canada

C: Tony Crane
T: +1 604 983 430 3
F: +1 604 983 431 3
W: www.britmar.com
E: tony@britmar.com

Croatia

Stal d.o.o.
Zagrebacka 2, 10431
Sveta Nedelja, Croatia

C: Miran Grom
T: +385 1 614 73 96
F: +385 1 614 73 96
M: +385 91 520 96 15
W: www.stal.hr
E: miran@stal.hr

Czech Republic

Acstroje s.r.o.
Jeremiasova 870
150 00 Praha 5
Czech Republic

C: Jiri Pech
T: +4 20 251 614 104
M: +4 20 739 578 426
E: jpech@acstroje.cz

Denmark

CTM GmbH - Composite Technologie & Material
Heinrich-Hertz-Strasse 38
24837. Schleswig
Denmark

C: Ralf Tapken
T: +49 4621 95533
F: +49 4621 95535
M: +49 170 31 38 072
W: www.ctmat.de
E: ralf.tapken@ctmat.de

Estonia

KG Knutsson AS
Saeveski 12, 11214
Tallinn, Estonia

C: Marek Andres
T: +372 6519 300
F: +372 53 490 551
M: +372 6 519 323
W: www.kgk.ee
E: marek.andres@kgk.eefi

Finland

Oy Kaha Ab
Ansatie 2, 01740
Vantaa, Finland

C: Jukka Kerminen
T: +358 9 6156 8296
F: +358 9 6156 8305
M: +358 400 498 541
W: www.kaha.fi
E: jukka.kerminen@kaha.fi

France

Webasto Thermo & Comfort France SAS
ZA de l  Estuaire sud, Rue du
camp d  aviation
44 320, Saint Viaud
France

C: Sebastien Guilbaud
T: + 33 (0)6 12 726 726
F: + 33 (0)2 40 218 218
M: + 33 (0)2 40 21 85 50
W: www.webasto.com
E: sebastien.guilbaud@webasto.com

Whisperpower Distributors

Germany
CTM GmbH - Marine Distributor
Heinrich-Hertz-Strasse 38
24837, Schleswig
Germany

C: Ralf Tapken
T: +49 4621 95533
F: +49 4621 95535
M: +49 170 31 38 072
W: www.ctmat.de
E: ralf.tapken@ctmat.de

Henrik Volkel -
Das Systemhaus mobile Energie
Hoistener Schulstrasse 5
41469, Neuss
Germany

C: Henrik Völkel
T: +49 2137 928212
F: +49 2137 928214
W: www.vmax24.de
E: Henrik.Voelkel@vmax24.de

Greece
Nautilus LTD
Metamorfoseos 2
17455, Alimos
Greece

C: Yiannis Tsavdaridis
T: +30 210 985 423 8
F: +30 210 984 944 4
W: www.nautilus.gr
E: ytsa@nautilus.gr

Nautilus LTD
N.Plastira 25
55132, Aretsou-Kalamaria
Greece

T: +30 231 045 291 9
F: +30 231 045 291 5
W: www.nautilus.gr
E: info@nautilus.gr

Nautilus LTD
Akti Moutsopoulou 36
Pasalimani, Greece

T: +30 210 428 347 8
F: +30 210 428 337 9
W: www.nautilus.gr
E: info@nautilus.gr

Nautilus LTD
Posidonos 4-8
14500, Lavrio
Greece

T: +30 229 206 928 8
F: +30 229 206 928 9
W: www.nautilus.gr
E: info@nautilus.gr

Iceland
Sturlaugur Jonsson & Co
Selhelli 13, 221
Hafnarfjordur
Iceland

C: J. Thorsteinsson
T: +354 412 3002
F: +354 412 3010
M: +354 893 9625
W: www.sturlaugur.is
E: ttht@sturlaugur.is

India
Brook Marine Equipment L.L.C.
37/91B2 Navkar Plaza, Kadavanthara
682 020, Kochi
India

C: Ramprasad Kodoth
T: +91 484 220 425 4
F: +91 484 220 425 4
E: nvp@tv-me.com

Indonesia
AJE TechServ Pte Ltd
Blk. 5068, Ang Mo Kio Ind.
Pk. 2 / #01-1463
569571, Singapore
Indonesia

C: A. Tan
T: +65 63161816
F: +65 64810260
W: <http://www.ajetechserv.com.sg>
E: info@ajetechserv.com.sg

Israel
Laor Energy 1993 Ltd.
P.O.Box 5026
60920, Kadima
Israel

C: U. Caspi
T: + 972 98912232
F: +972 98913233
W: <http://www.laor-energy.com>
E: uri@Laor-energy.com

Italy
UFLEX Srl
Via Milite Ignoto 8A
16012, Busalla GE
Italy

C: Avigdor Giorgio
T: +39 010 962 020 4
F: +39 010 962 033 3
E: avigdor@ultraflexgroup.it

Japan
Okazaki Yachts Ltd
4-14-2 Nishinomiyahama
663, Hyogo
Japan

C: Yousuke Okazaki
T: +81 798 320 202
F: +81 798 320 404
E: info@yachts.co.jp

Macedonia
Stal d.o.o.
Tbilisijaska ulica 89
1000, LJUBLJANA - Slovenia
Macedonia

C: Miran Grom
T: +386 1 423 35 40
F: +386 1 423 51 67
M: +386 4171 7852
W: www.stal.si
E: miran@stal.si

Malaysia
AJE TechServ Pte Ltd
Blk. 5068, Ang Mo Kio Ind.
Pk. 2 / #01-1463
569571, Singapore
Malaysia

C: A. Tan
T: +65 63161816
F: +65 64810260
W: <http://www.ajetechserv.com.sg>
E: info@ajetechserv.com.sg

Malta
United Equipment Co. (UNEC) Ltd.
Burmarrad Road
SPB 6073, Burmarrad, Malta

C: Gilbert Bonnici
T: +356 2359 6224
F: +356 2158 5443
W: www.unec.com.mt
E: gbonnici@unec.com.mt

Montenegro
Stal d.o.o.
Tbilisijaska ulica 89
1000, LJUBLJANA - Slovenia
Montenegro

C: Miran Grom
T: +386 1 423 35 40
F: +386 1 423 51 67
M: +386 4171 7852
W: www.stal.si
E: miran@stal.si

New Zealand
NewPowr Integrators
4/11 Arrenway Drive
0632, Auckland
New Zealand

C: J. McGettigan
T: +64 9 479-5205
M: +64 27 4979567
W: www.newpowr.co.nz
E: info@newpowr.co.nz

Norway
Staubo Elektro-Maskin AS
Bjornerudv. 12C
1266, Oslo, Norway

C: Gudbjørn Grimsson
T: +47 227 535 00
F: +47 227 535 01
W: www.staubo.no
E: gudbjorn.grimsson@staubo.no

Poland
Tomatrik Polska
ul. Kosciuszki 109
26-120, Blizyn
Poland

C: Tomasz Zdrojewski
T: +48 412 541 693
F: +48 728 352 515
E: tzdrojewski@whisperpower.nl

Portugal
Cinemall, LDA
Av. Berlín, 33 A
1800-033, Lisboa
Portugal

C: Nelsa Natal
T: +35 121 853 2308
F: +35 121 853 0214
M: +35 191 930 2705
W: www.cinemall.pt
E: nelsanatal@cinemall.pt

Romania
Furitech SRL Galati
Str. Delfinului Nr. 3+5
800223, Galati
Romania

C: Mihai Teoharie
T: 0040 236 471 068
F: 0040 236 471 068
E: office@furitech.ro

Schweiz
LEAB AG
Oberwolfhauserstrasse 10
8633, Wolfhausen, Schweiz

C: Yves Rechsteiner
T: 0041 (0)55 253 26 04
F: 0041 (0)55 253 26 07
W: www.leab.ch
E: info@leab.ch

Whisperpower Distributors

Serbia
Stal d.o.o.
Tbilisijska ulica 89
1000, LJUBLJANA - Slovenia
Serbia

C: Miran Grom
T: +386 1 423 35 40
F: +386 1 423 51 67
M: +386 4171 7852
W: www.stal.si
E: miran@stal.si

Singapore
AJE TechServ Pte Ltd
Blk. 5068, Ang Mo Kio Ind. Pk. 2 /
#01-1463
569571
Singapore

C: A. Tan
T: +65 63161816
F: +65 98463144
M: +65 98463144
W: http://www.ajetechserv.com.sg
E: info@ajetechserv.com.sg

Slovenia
Stal d.o.o.
Tbilisijska ulica 89
1000
LJUBLJANA
Slovenia

C: Miran Grom
T: +386 1 423 35 40
F: +386 1 423 51 67
M: +386 4171 7852
W: www.stal.si
E: miran@stal.si

South Africa
New distribution network will be announced shortly.

Call our headquarters for more information and network information.
South Africa

C: Hans van der Zaag
T: +31 512 571 565
F: +31 512 571 599
W: www.whisperpower.com
E: sales@whisperpower.com

Spain
Nautica Selemar SL
Varadero Puerto Banus S/N
29680, Marbella, Malaga
Spain

C: Miguel garc
T: +34 952 812 121
E: info@nauticaselemar.com

St. Lucia
Regis Electronics (St Lucia) Ltd
PO Box RB2265
Rodney Bay Marina, Gros Islet
St. Lucia

C: White Jon
T: +1 758 452 0205
F: +1 758 452 0206
W: www.regiselectronics.com
E: stlucia@regiselectronics.com

Sweden
Sell Power AB
Baggakersgatan 4a
43153, Molndal
Sweden

C: Martin Lindgren
T: +46 317 618 580
F: +46 317 618 585
W: www.sellpower.se
E: martin@sellpower.se

Taiwan
Hectos LTD
8f-4, 296, Shin Yi Road
Taipei, Taiwan

T: +88 622 707 330 0
W: www.hecotos.com

Thailand
Electrical Marine
Phuket Boat Lagoon, 20/9-10 Moo 2
Thepkasattri Road, Koh Kaew
83000, Muang Phuket
Thailand

T: +66 76 239 112
W: www.electrical-marine.com
E: damian@electrical-marine.com

Turkey
MARINTEK AS
Ünalan Mh. Ünalan cd. 9/1
Üsküdar 34700
ISTANBUL
Turkey

C: C. Arsay
T: +90 216 317 1010
M: +90 216 317 5656
W: www.marintek.com.tr
E: info@marintek.com.tr

Ukraine
MARINE-ENERGY
7B Lebedeva-Kumach str. (2nd floor)
3113, Kiev, Ukraine

C: Oleg Nikishyn
T: +38 501 689 306
F: +38 681 188 579
M: +38 674 627 572
W: www.energy.kiev.ua/en/
company/contacts/
E: sales@marine-energy.com.ua

Marine Energy (Kharkov Branch)
23 Rymars ka street
Kharkiv, Ukraine

T: +38 444 952 889
M: +38 444 952 881
E: common@energy.kiev.ua

United Arab Emirates
Brook Marine Equipment L.L.C.
P.O. Box 98189
Al Jaddaf, Dubai
United Arab Emirates

C: Ramprasad Kodoth
T: +971 432 448 48
F: +971 432 448 45
M: +971 504 814 671
W: www.brookmarine.com
E: ramprasad@brookmarine.com

United Kingdom
Intellitec Ltd (Mobile Distribution UK)
Unit 9, Woodway Court Thursby Rd
CH 623PR, Bromborough, Wirral
United Kingdom

C: D Hughes
T: +44 151 48 28 970
F: +44 151 48 28 977
W: www.intellitecmv.com
E: dh@intellitecmv.com

USA
Ocean Options
95 Riverside Dr.
RI 02878
Tiverton (NORTHEAST USA)
USA

AER Supply
2301 NASA Parkway
TX 77586
Seabrook (GULFCOAST USA)
USA

Southern California Marine Enterprises
1214 Rosecrans St.
CA 92106
San Diego (SOUTHWEST USA)
USA

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WhisperPower BV (the Netherlands)



WhisperPower Germany



WhisperPower Russia



WhisperPower UK



WhisperPower Spain



WhisperPower USA



WhisperPower China



WhisperPower Pacific

green
energy
solutions

Represented in over 50 countries
www.whisperpower.com

Main office

WhisperPower BV
Kelvinlaan 82
9207 JB Drachten
The Netherlands

Tel: +31 (0) 512 571 550
Fax: +31 (0) 512 571 599

info@whisperpower.com
www.whisperpower.com

Distributor/Dealer:



green energy solutions