

Power distribution

AC Power Distribution

To connect a vehicle or boat safely to land power a number of safety devices are needed. Having covered the actual land connection, we will now look at the extra components needed to be ensured of a safe and certified installation.

- Galvanic separators in the form of a simple galvanic isolator or isolation transformer: see page 90
- Earth leakage protection in the form of a cabinet with breaker
- A fuse box or distribution system is necessary for extensive installations with AC power consumers connected directly to the land power.
- If there are multiple AC power sources present, such as an inverter and generator, then it is recommended to install an automatic switching system.

The WhisperPower "All-in-One" systems and the WPC contain the various switching and distribution functions already integrated.



WhisperSwitch Transfer System

The traditional WhisperSwitch systems regulate the power distribution between energy sources fully automatically. AC and generator / inverter IN, 230 / 120 VAC onboard groups OUT, everything in one cabinet. The connected devices make use of the sources (maximum two) which are available at the time.

WhisperSwitch is available in the following versions:

- 2 inputs, for example land / inverter or land / generator with 1 output. Capacity 6 kW / 26 A at 230 VAC / 50 Hz
- 2 inputs, for example land / inverter or land / generator with 1 output for consumers. Capacity 10 kW / 42 A at 230 VAC / 50 Hz
- 2 inputs, 1 output. Capacity 6 kW / 50 A at 120 VAC / 60 Hz
- 2 inputs, 1 output. Capacity 10 kW / 83 A at 120 VAC / 60 Hz





AC Transfer Systems: 3 inputs

These analogue switching devices are able to feed the onboard power supply from three different sources: land power, generator and inverter. There are three output circuits, available with different capacities.

As an alternative solution, it is also possible to install two standard WhisperSwitches.

- switch from land to generator
- switch between generator and inverter

Earth Leakage Protection

WhisperPower supplies Plug and Play earth leakage breakers for single and three phase systems. An earth leakage switch protects the electrical installation against leakage current preventing dangerous situations.

We supply the WP-Shore Connect system as a Plug and Play solution: the land power is connected on one side and the onboard installation on the other. See page 90 for the 100 % safe solution with the WP-GI isolation transformer.





WhisperSwitch

| | 6 – 6 kW (2 X IN, 1 X OUT) | 10 – 10 kW (2 X IN, 1 X OUT) | 6 – 5 kW (2 X IN, 1 X OUT) |
|--|---|--|---------------------------------------|
| Article Number | 50214670 | 50214671 50214673 (10 kW 120 VAC 1-phase) | 50214672 |
| TECHNICAL SPECIFICATIONS | | | |
| Nominal input voltage | 230 VAC (50 / 60 Hz) | 230 VAC (50 / 60 Hz) | 120 VAC |
| Input voltage range | 200 - 250 VAC | 200 - 250 VAC | 100 - 250 VAC |
| Number of AC inputs | 2 x (Shore/ Generator) | 2 x (Shore/ Generator) | 2 x (Shore/ Generator) |
| Number of AC outputs | 1 | 1 | 1 |
| Dimensions (W x D x H) in mm | 140 x 100 x 240 | 210 x 100 x 240 | 140 x 100 x 240 |
| Weight | 1 kg | 1.7 kg | 1 kg |
| TECHNICAL SPECIFICATIONS | | | |
| Nominal output current generator | 26 A | 42 A | 45 A |
| Nominal input current land power | 26 A | 42 A | 45 A |
| Nominal output current inverter | 25 A | 32 A | 45 A |
| Earth leakage switch | Not integrated | Not integrated | Not integrated |
| Input generator monitoring | Continuous voltage and frequency monitoring | | |
| Delay generator input | 0 - 10 sec. (adjustable) | 0 - 10 sec. (adjustable) | 0 - 10 sec. (adjustable) |
| Nominal output current | 25 A | 25 A | 25 A |
| Automatic fuses | Not integrated | Not integrated | Not integrated |
| Energy consumption (AC, all inputs) | 27 W | 27 W | 27 W |
| Power consumption (inverter capacity only) | < 1 W | < 1 W | < 1 W |
| Switching time | Switch ON 12 - 22 ms / switch OFF 4 - 19 ms | | |
| Temperature range (specified) | -5 up to 60°C / 23 up to 140°F | -5 up to 60°C / 23 up to 140°F | -5 up to 60°C / 23 up to 140°F |
| Temperature range (ambient) | -25 up to 70°C / -13 up to 158°F | -25 up to 70°C / -13 up to 158°F | -25 up to 70°C / -13 up to 158°F |
| Temperature range (not working) | -60 up to 80°C / -76 up to 176°F | -60 up to 80°C / -76 up to 176°F | -60 up to 80°C / -76 up to 176°F |
| Relative humidity | Maximum 95 %, non-condensing | Maximum 95 %, non-condensing | Maximum 95 %, non-condensing |
| Frequency monitoring | Yes | Yes | Yes |
| Cable diameter | 0.5 - 10 mm ² / AWG 20 - 7 | 0.5 - 10 mm ² / AWG 20 - 7 | 0.5 - 10 mm ² / AWG 20 - 7 |
| International Protection rating | IP23 | IP23 | IP23 |

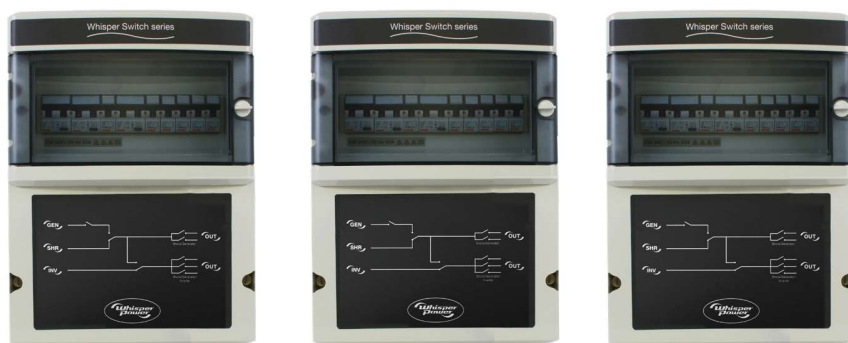
AVAILABLE ON REQUEST

WP-AC TRANSFER SYSTEM SWITCH

for 3 phase generator, inverter

for 25 and 32 kW





AC Transfer System Switch

| | 5 kW | 10 kW | 16 kW |
|--|--|------------------------------------|------------------------------------|
| Article Number | 50214690 | 50214691 | 50214692 |
| GENERAL SPECIFICATIONS | | | |
| Power rating | 5 kW | 10 kW | 16 kW |
| Nominal input voltage | 230 VAC (50 / 60 Hz) | 230 VAC (50 / 60 Hz) | 230 VAC (50 / 60 Hz) |
| Input voltage range | 200 - 250 VAC | 200 - 250 VAC | 200 - 250 VAC |
| No. of AC inputs | 3 (shore, generator, inverter) | 3 (shore, generator, inverter) | 3 (shore, generator, inverter) |
| No. of AC outputs | 3 output groups | 3 output groups | 3 output groups |
| Dimensions (W x D x H) in mm | 261 x 144 x 340 | 261 x 144 x 340 | 261 x 144 x 340 |
| Dimensions (W x D x H) in inch | 10.3 x 5.7 x 13.4 | 10.3 x 5.7 x 13.4 | 10.3 x 5.7 x 13.4 |
| Weight | 4.4 kg / 9.7 lb | 4.4 kg / 9.7 lb | 4.4 kg / 9.7 lb |
| TECHNICAL SPECIFICATIONS | | | |
| LED indicators on cabinet | Power sources present indication and 'load on inverter' mode | | |
| Nominal input current generator | 25 A | 42 A | 68 A |
| Nominal input current land power | 25 A | 42 A | 68 A |
| Nominal input current inverter | 25 A | 42 A | 68 A |
| Earth leakage switch | Not integrated | Not integrated | Not integrated |
| Input generator monitoring | Continuous voltage and frequency monitoring | | |
| Delay generator input | 0 - 10 sec. (adjustable) | 0 - 10 sec. (adjustable) | 0 - 10 sec. (adjustable) |
| Nominal output Short circuit current | 25 A | 42 A | 68 A |
| Nominal output current | 25 A | 42 A | 68 A |
| Automatic fuses | No, depends on system | No, depends on system | No, depends on system |
| Energy consumption (AC, all inputs) | 27 W | 27 W | 27 W |
| Power consumption (inverter capacity only) | < 1 W | < 1 W | < 1 W |
| Switching time | switch ON 12-22 ms / switch OFF 4 - 19 ms | | |
| Temperature range (specified) | -5°C up to 60°C / 23 up to 140°F | -5°C up to 60°C / 23 up to 140°F | -5°C up to 60°C / 23 up to 140°F |
| Temperature range (ambient) | -25°C up to 70°C / -13 up to 158°F | -25°C up to 70°C / -13 up to 158°F | -25°C up to 70°C / -13 up to 158°F |
| Temperature range (not working) | -60°C up to 80°C / -76 up to 176°F | -60°C up to 80°C / -76 up to 176°F | -60°C up to 80°C / -76 up to 176°F |
| Relative humidity | Maximum 95 %, non-condensing | Maximum 95 %, non-condensing | Maximum 95 %, non-condensing |
| Frequency monitoring | Yes | Yes | Yes |
| Cable diameter | 0.5 - 10 mm ² / AWG 20 - 7, remote control 0.14 - 2.5 mm ² / AWG 26 - 13 | | |
| International Protection rating | IP23 | IP23 | IP23 |

WP-IG

Isolation Guard

For optimal safety, vehicles using 230 VAC 50 Hz Inverter / Combi / Genset power as well as power from the grid line to operate the various appliances require the installation of the WP-IG Isolation Guard.



ART. NR. 60110115

WP- Isolation Guard Inverter



ART. NR. 60110116

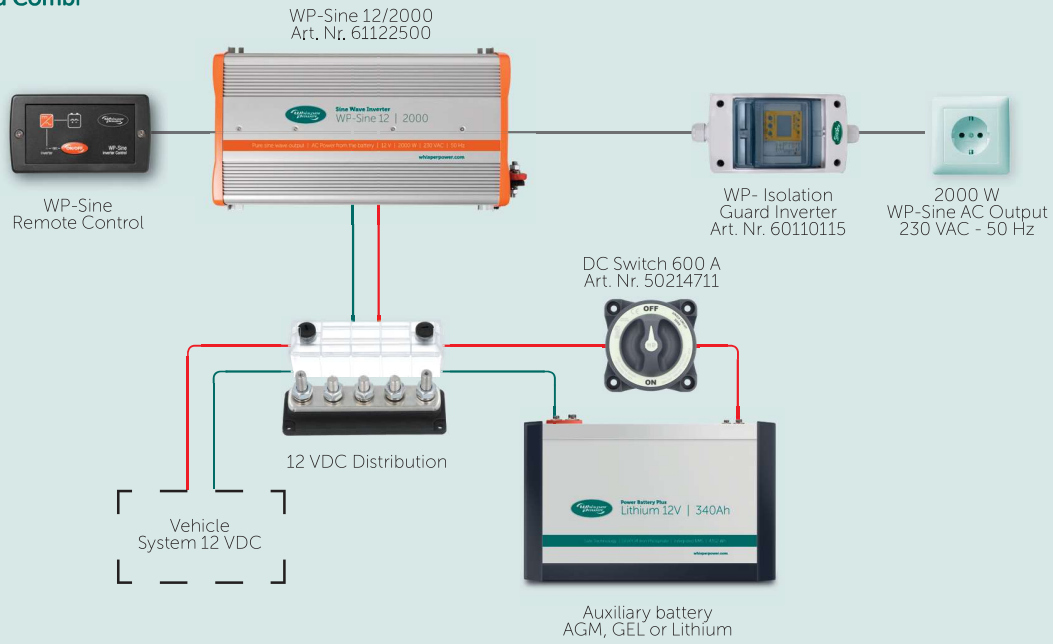
WP- Isolation Guard Combi

This is a fully automatic safety device that measures the electrical resistance in the AC wiring and should it detect a potential risk to safety, switches the power off immediately. The system works as follows: when the WhisperPower Inverter or Combi is turned on, the WP-IG Isolation Guard executes a short system test. Once the test is complete the green LED on the device will illuminate. The internal relay then allows the 230 VAC installation inside the vehicle to be operated by the Inverter and / or Combi inverter / charger.

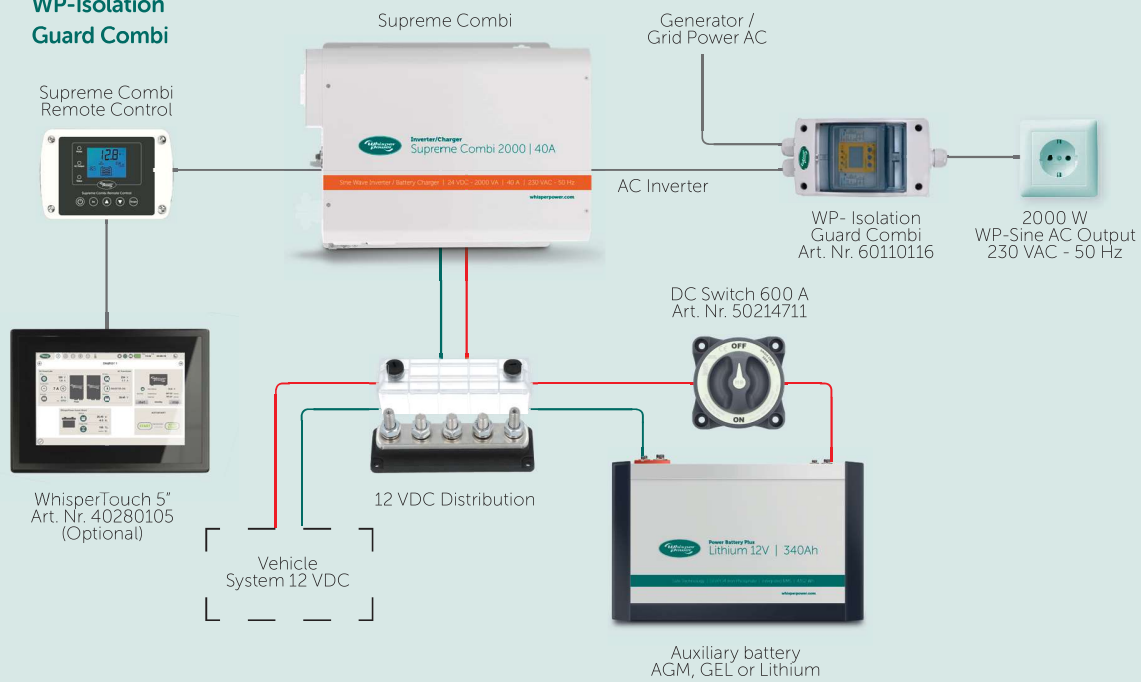
WhisperPower offers a selection of products based on safe work principles for users of various vehicles which are fitted with an AC power installation (230 VAC / 50 Hz or 120 VAC / 60 Hz). In most countries safety regulations for low voltage installations (such as NEN 1010 in the Netherlands) are classified as practical guidelines and working standards to be followed by the vehicle builder or installer. Our safety and protection products include 230 VAC / 50 Hz Isolations Guards, Isolation transformers and professional AC distribution devices.



WP-Isolation Guard Combi



WP-Isolation Guard Combi



Isolation Guard Series

| | ISOLATION GUARD INVERTER | ISOLATION GUARD COMBI |
|---------------------------------|--------------------------|-----------------------|
| Article Number | 60110115 | 60110116 |
| BRIEF SPECIFICATIONS | | |
| Nominal voltage | 230 VAC / 110 VAC | 230 VAC / 110 VAC |
| Switching Current | 25 A | 25 A |
| Switching Capacity | 5750 W | 5750 W |
| Frequency | 50-60 Hz | 50-60 Hz |
| International Protection rating | IP65 | IP65 |
| Dimensions (W x D x H) | 100 x 105 x 170 mm | 100 x 105 x 170 mm |
| Weight | 1.75 kg | 2.05 kg |



WP-GI

Galvanic protection

Connecting a yacht, ship or vehicle to land power can consequently lead to sustaining damage if galvanic isolation has not been taken in to account. Galvanic corrosion can drastically damage a vessel's underwater metal parts. Corrosion can be partially prevented by the application of galvanic anodes (sacrificial anodes) below the waterline. How effective an anode is depends on a good electrical connection, and is directly proportional to the surface area of the anode.



WhisperPower offers a selection of products to help minimize galvanic corrosion such as the cost effective galvanic isolator and the WP-GI isolation transformer.

What is a Galvanic Isolator

- It is a small metal enclosure containing electronics and semiconductors
- Optimizes the life of the galvanic anodes and protects metal parts on the boat against galvanic corrosion. It prevents stray currents from the land
- A WhisperPower Galvanic Isolator is connected to the anode and the equipotential system on board
- It lets through a nominal current of 30 A or 60 A

Why choose a WP-GI Isolation Transformer

- Installing a WP-GI is the best and safest solution
- The WP-GI is indispensable for steel or aluminum boats
- The ground loop between the land and ship is interrupted fully by the coil in the WP-GI, preventing galvanic corrosion
- The WP-GI has to be installed inside the boat, close to the land power connection - the AC on board installation is connected to the WP-GI output
- Power rating of 16 A and 32 A (2 x WP-GI's in parallel)
- Built-in soft start suppresses inrush current and prevents the land fuses from tripping
- The WP-GI can also be adjusted for 120 VAC land power (and vice versa)
- Can be connected worldwide
- Absolutely silent, no humming

**WP-GI 16**

Galvanic Isolator 16 A



WP-GI 3600 - 110/230 VAC

Compact Isolation-Transformer 3600 VA
7200 VA by connecting 2 in parallel



WP-GI 32

Galvanic Isolator 32 A (230 VAC)



WP-GI 3600**WP-GI 3600 COMPACT ISOLATION TRANSFORMER**

Article Number 60110102

TECHNICAL SPECIFICATIONS

| | |
|---------------------|--|
| Application | Isolation transformer for electrical safety and protections against galvanic corrosion |
| Transformer type | Toroidal isolation transformer with two windings |
| Construction design | Special vibration damping mountings |
| Cooling | Temperature controlled increasing (uniform) fan cooling above 60°C temperature |

WINDING INFORMATION

| | |
|------------------------|--|
| Nominal power | 3600 VA |
| Nominal voltage | 230 VAC / 110 VAC |
| Nominal frequency | 50 Hz (60 Hz USA) |
| Nominal current | 16 A / 32 A |
| Inrush current | Built-in soft start, < 4 A per transformer |
| Supply points | Primary, secondary, middle (110 VAC) |
| Windings (Material) | Copper |
| Temperature rise class | F 100 K |
| Isolation class | H 180 C |
| Isolation level | Class AC3 |
| Impedance | Secondary <3 % at 3600 VA |

GENERAL

| | |
|------------------------------------|---|
| Consumption (no load) | 21 W per transformer |
| Efficiency (At full load) | > 95 % |
| Ambient operating temperature | -10 up to 45°C, with power reduction up to 80°C |
| Storage temperature | -25 up to 85°C |
| Relative humidity during operation | Up to 95 %, non-condensing |
| Noise levels | < 4 dB(A); < 50 dB(A) with ventilator |
| User interface | No |

PROTECTIONS

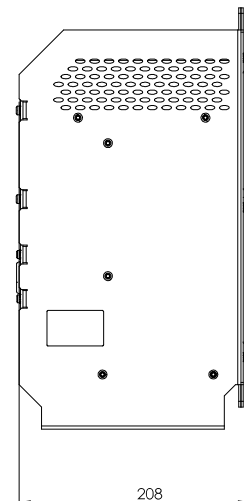
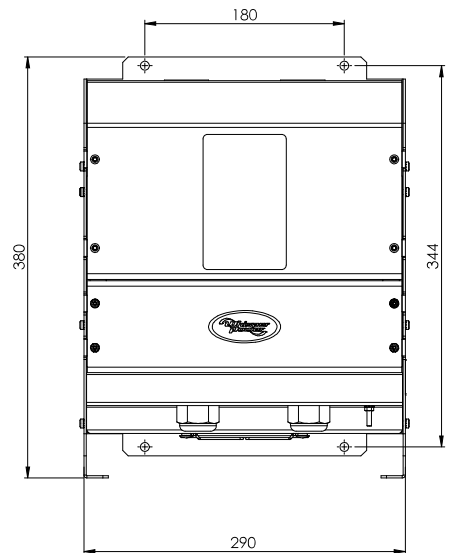
| | |
|----------------------------------|---|
| Current rating / short circuit | Not built-in, external fuse(s) subject to local regulations |
| Temperature protection | Automatic shut down at core temperature > 120°C |
| Too high voltage | Soft start protection with fuse |
| Earth isolation between windings | Conforms to ABYC, resistant against full leakage current |
| Safety standards | IEC 60079, IEC 60726 |

MECHANICAL SPECIFICATIONS

| | |
|---------------------------------|-------------------------------------|
| International Protection rating | IP21 |
| Connection In / Out | Maximum 6 mm ² |
| Cable gland | 22 mm |
| Dimensions (W x D x H) in mm | 290 x 208 x 380 |
| Mounting holes | M8 |
| Weight | 28.6 kg |
| Material housing | Sheet steel |
| Colour & finish | RAL9010 white + AE80104123621 black |

ACCESSORIES ARTICLE NUMBER**IT IS RECOMMENDED TO INCORPORATE A EARTH LEAKAGE PROTECTION IN THE AC SUPPLY**

| | |
|----------|---|
| 60110105 | WP-GI alternative box for DIN-rail mounting |
| 50214640 | Shore power fuse 16 A / 230 VAC single phase, 3 core |
| 50214641 | Shore power fuse 25 A / 230 VAC single phase, 3 core |
| 50214642 | Shore power fuse 35 A / 230 VAC single phase, 3 core |
| 50214645 | WP-Energy Meter, 65 A phase and zero, for DIN-rail mounting |

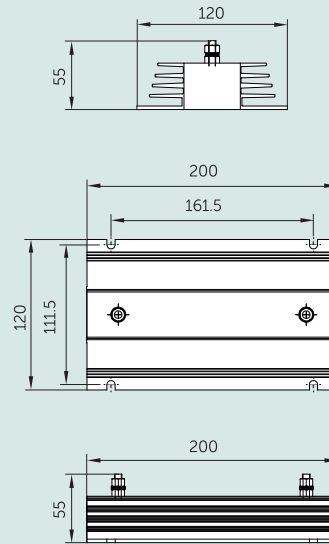
WP-GI 3600 - 110/230 VAC**Isolation Transformer**

WP-GI

Galvanic Isolator 16 A

WP-GI GALVANIC ISOLATOR 16 A

| | |
|---------------------------------|-------------------|
| Article Number | 60110140 |
| Maximum current | 16 A |
| Peak current | 1600 A / 20 ms |
| Connection | 2x M6 |
| Cooling fins | Aluminum |
| International Protection rating | IP67 |
| Material | Anodised Aluminum |
| Dimensions (W x D x H) in mm | 200 x 60 x 120 |

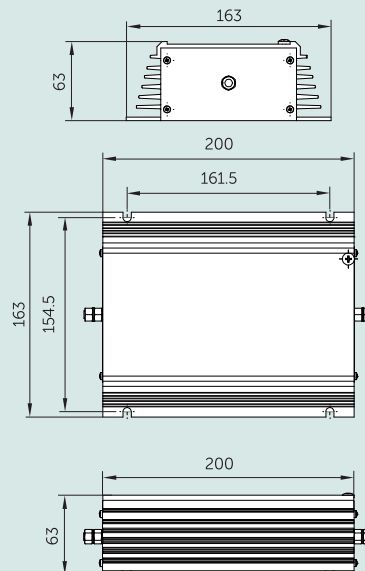


WP-GI

Galvanic Isolator 32 A

WP-GI GALVANIC ISOLATOR 32 A

| | |
|---------------------------------|-------------------|
| Article Number | 60110150 |
| Maximum current | 32 A |
| Peak current | 1600 A / 20 ms |
| Connection | 2x M6 |
| Cooling fins | Aluminum |
| International Protection rating | IP67 |
| Material | Anodised Aluminum |
| Dimensions (W x D x H) in mm | 200 x 63 x 163 |

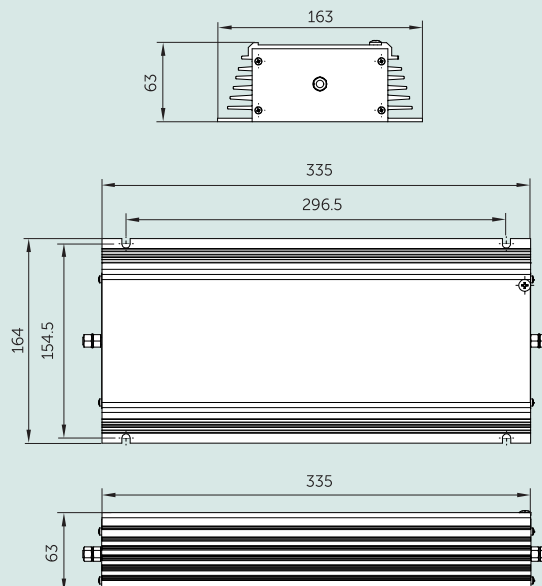


WP-GI

Galvanic Isolator 64 A

WP-GI GALVANIC ISOLATOR 64 A

| | |
|---------------------------------|-------------------|
| Article Number | 60110155 |
| Maximum current | 64 A |
| Peak current | 6000 A / 20 ms |
| Connection | 2x M6 |
| Cooling fins | Aluminum |
| International Protection rating | IP67 |
| Material | Anodised Aluminum |
| Dimensions (W x D x H) in mm | 335 x 63 x 164 |



Safe and reliable

Land power connections

For movable objects, vehicles and vessels, WhisperPower provides convenient Plug and Play cable sets. This is the “life line” from land power to the object, ensuring that the technical equipment remains powered all the time.



A vital component of the land power connection is the battery charger which recharges and maintains the voltage for the service, starter and the bow thruster batteries.

The WhisperPower battery charger or inverter / charger Combi ensures that the battery remains in perfect condition throughout the whole year whilst also ‘buffering’ sufficient current to provide the various 12, 24 VDC and/or 120 / 230 VAC electrical devices with power whilst on board. The next few pages cover the necessary installation components to ensure uninterrupted and safe connection to land. All electrical thru-hull inlets have an LED indicator that turns on when the connection is successful.

Main ingredients for a reliable land power connection

- Complete cable sets for land to object connection, 15 or 25 metre, 16 or 32 Amps, complete with connectors / plugs
- Thru-hull stainless steel inlets
- Plugs to fit the inlets
- Cable storage case
- Industrial cable reel



CABLE SETS WITH IEC 60309 PLUGS (CABLE SET STORAGE BAG INCLUDED)

| Article Number | 50214751 | 50214752 | 50214741 | 50214742 | 50214744 |
|---------------------------------|---------------------------------|---------------------------------|--------------------------------|--------------------------------|--------------------------------|
| TECHNICAL SPECIFICATIONS | | | | | |
| For use up to | 16 A / 250 VAC | 16 A / 250 VAC | 25 A / 250 VAC | 25 A / 250 VAC | 32 A / 250 VAC |
| Cable | H07BQ-F 3G1, 50 mm ² | H07BQ-F 3G1, 50 mm ² | H07BQ-F 3G6,00 mm ² | H07BQ-F 3G6,00 mm ² | H07BQ-F 3G6,00 mm ² |
| IP Rating | IP56 | IP56 | IP56 | IP56 | IP56 |
| Certification | CE | CE | CE | CE | CE |
| LED Power Indication | Yes | Yes | Yes | Yes | Yes |
| Length | 15 m | 25 m | 15 m | 25 m | 25 m |

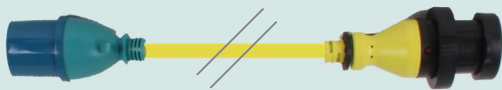


WP-AC

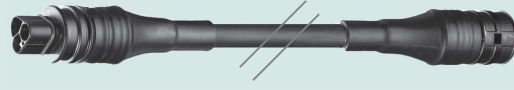
Basic Kit 230 VAC "only"

Our Land Power Kit is a great solution for installers who want to reduce installation time and at the same time enhance the quality of the electrical system. A WhisperPower Shore Power kit consists of 15 metre yellow land power cable and storage bag, a compact 16 A stainless steel inlet with signal LED (power ON-OFF), a connection cable to plug into an electrical box with earth-leak protector (GFI) and a double socket with cable connection to the electrical box. All connections are waterproof, the whole system complies with CE regulations. Amperage 16 A. Optional: plug-in battery chargers or Combi's.

Article Number: 50214745



| LAND POWER CORD SET P/N 2801 | |
|------------------------------|-------------------------|
| Dimension | Ø 8.5 mm |
| Temperature range | -40 up to 80 °C |
| Insulation class | IP56 |
| Conductor area | 3 x 1.5 mm ² |
| Voltage | 250 VAC |
| Current | 10 A |
| Length | 15 m |
| Weight | 2.1 kg |



| INTERNAL CABLE | |
|---------------------|---------------------------|
| Dimension | Ø 11.3 mm |
| Cable lengths | 1 m / 2 m |
| Insulation class | IP66 / IP68 |
| Conductor area cord | 3 x 2.5 mm ² |
| Voltage | 250 VAC |
| Current | 20 A |
| Weight | 220 g (1 m) / 430 g (2 m) |



| WALL SOCKET | |
|------------------------------|---------------|
| Dimensions (W x D x H) in mm | 75 x 65 x 210 |
| Insulation class | IP55 |
| Voltage | max. 250 VAC |
| Current | 16 A |
| Weight | 320 g |



| STAINLESS STEEL SHORE POWER INLET | |
|-----------------------------------|-------------------------|
| Dimension | Ø 90 mm |
| Length of connection cord | 40 cm |
| Insulation class | IP56/ IP68 (cord) |
| Conductor area cord | 3 x 2.5 mm ² |
| Voltage | max. 250 VAC |
| Current | 16 A |



| ELECTRICAL CABINET | |
|------------------------------|----------------|
| Dimensions (W x D x H) in mm | 80 x 100 x 260 |
| Insulation class | IP55 |
| Voltage | max. 250 VAC |
| Current | 16 A |
| Weight | 560 g |

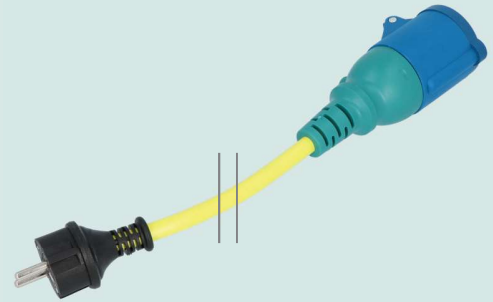
PLUGS (STANDARD WITH CABLE SETS)

| | | |
|---------------------------------|-----------------------|-----------------------|
| Article Number | 50214688 | 50214689 |
| TECHNICAL SPECIFICATIONS | | |
| For use up to | 16 A / 250 VAC (max.) | 32 A / 250 VAC (max.) |
| IP Rating | IP56 | IP56 |
| Certification | CE | CE |



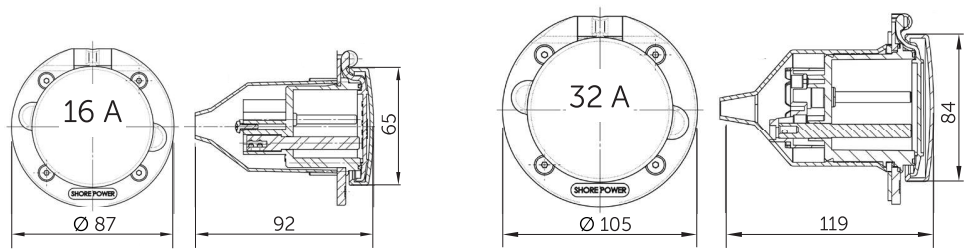
**LAND POWER CORD SET
ADAPTOR CORD 16 A / 250 VAC SCHUKO TO CEE**

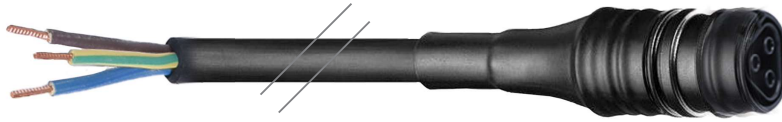
| | |
|--------------------------------|-------------------------|
| Article Number | 50214720 |
| DIMENSIONS & WEIGHT | |
| Weight | 2.1 kg |
| Length | 15 m |
| Dimension | Ø 8.5 mm |
| GENERAL | |
| Temperature range | -40 °C up to 80 °C |
| Insulation class | IP56 |
| Conductor area | 3 x 1.5 mm ² |
| Voltage | 250 VAC |
| Current | 10 A |



16 A POLYAMIDE VERSION 16 A STAINLESS STEEL VERSION 32 A STAINLESS STEEL VERSION

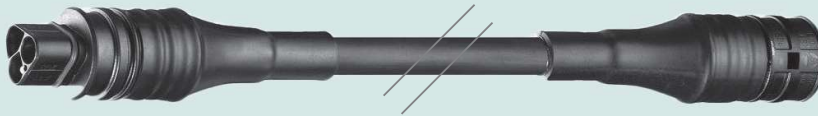
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|---------------------------------|-----------------------|-----------------------|-----------------------|
| Article Number | 50214680 | 50214684 | 50214685 |
| TECHNICAL SPECIFICATIONS | | | |
| For use up to | 16 A / 250 VAC (max.) | 16 A / 250 VAC (max.) | 32 A / 250 VAC (max.) |
| IP Rating | IP56 | IP56 | IP56 |
| Certification | CE | CE | CE |
| Dimension | Ø 87 mm | Ø 87 mm | Ø 105 mm |
| Weight | 230 g | 340 g | 650 g |





WHISPERPOWER LAND POWER CONNECT 230 VAC 50 Hz

| Article Number | Model |
|----------------|---|
| 50217140 | WP-QC Mains Power Cord, FEMALE Crimp Socket • Free Ends, 1 m, Rubber 60°C Black - 3-wire L+N+PE |
| 50217141 | WP-QC Mains Power Cord, MALE Crimp Socket • Free Ends, 1 m, Rubber 60°C Black - 3-wire L+N+PE |



WHISPERPOWER LAND POWER CONNECT 230 VAC 50 Hz

| Article Number | Model |
|----------------|--|
| 50217150 | WP-QC - Extension cable female - male • 3 pole - 1.5 mm ² 1 m Black Rubber 60°C - 3-wire L+N+PE |
| 50217151 | WP-QC - Extension cable female - male • 3 pole - 1.5 mm ² 6 m Black Rubber 60°C |
| 50217153 | WP-QC - Extension cable female - male • 3 pole - 1.5 mm ² 10 m Black Rubber 60°C |
| 50217154 | WP-QC - Extension cable female - male • 3 pole - 1.5 mm ² 2 m Black PVC 70°C |



Article Number: 50217161



Article Number: 50217164



Article Number: 50217165

WHISPERPOWER LAND POWER CONNECT 230 VAC 50 Hz

| Article Number | Model |
|----------------|---|
| 50217161 | WP-QC Distribution block, 1 input (Female) and 3 outputs (Male) 3 pole 250 VAC / 20 A - Black |
| 50217164 | WP-QC Inlet - Chassis mounting - Female Black • 3 pole 250 VAC / 20 A |
| 50217165 | WP-QC Inlet - Chassis mounting - Male Black • 3 pole 250 VAC / 20 A |

Quick Connect unplugged



Quick Connect plugged

