ampair®

Iolaire with a original Ampair 50 from 1973 which made many Atlantic crossings powered only by Ampair

Picture courtesy Beken of Cowes (beken.co.uk)

Marine Product Guide

Supplying wind and water generators to the marine market since 1973

2012/2013

CD 3204 / 1.0

Greetings from the frozen north. I was already impressed with the performance and durability of Ampair. But yesterday we were off the scale-force 12 plus (65 knots) and flying ice. When we dug our way out it was still whizzing round. A great bit of kit.
Mark Evans. Artic Year. 2002

Relied upon by sailors, on every ocean for 39 years

Ampair has been manufacturing high quality turbines in Dorset, UK for 39 years. In this time, we've built a worldwide reputation as being the manufacturer of the world's most durable wind turbines.

Whilst initially designed for yachts, our turbines are now used to reliably power all kinds of equipment in some of the most extreme environments on earth.

Legendary build quality and 39 years of continual design refinements ensure that you'll get many years of service from an Ampair turbine. Our blades are designed not to break and our generators are designed not to burn out – even in the most severe winds that mother nature can deliver.

An Ampair turbine is a lifetime investment. As our CEO David Sharman says, *"An Ampair is usually a customer's second wind turbine... ".*

Picture courtesy Northanger (www.northanger.org)

5 year warranty

On all Ampair marine turbines *

Lifetime AmpairCare^{tm}

Direct access to lifetime worldwide technical support *

* See our website for further terms and conditions.

Cruising the Sea of Cortez for the next 18 months. Both wind generators are working well after now some 5 years.
Nick Moore, Sonisa

Contents

Wind and water brochure showcasing Ampair's unique marine range

"The Aquair 100 gave reliable charging for two Atlantic crossings, and was the perfect power solution in areas where solar panels would not perform". "I highly recommend Ampair's Aquair charger, even for smaller cruising boats".
Rory McDougall
www.roryandcookie.com

Hybrid wind & water power for long distance sailing

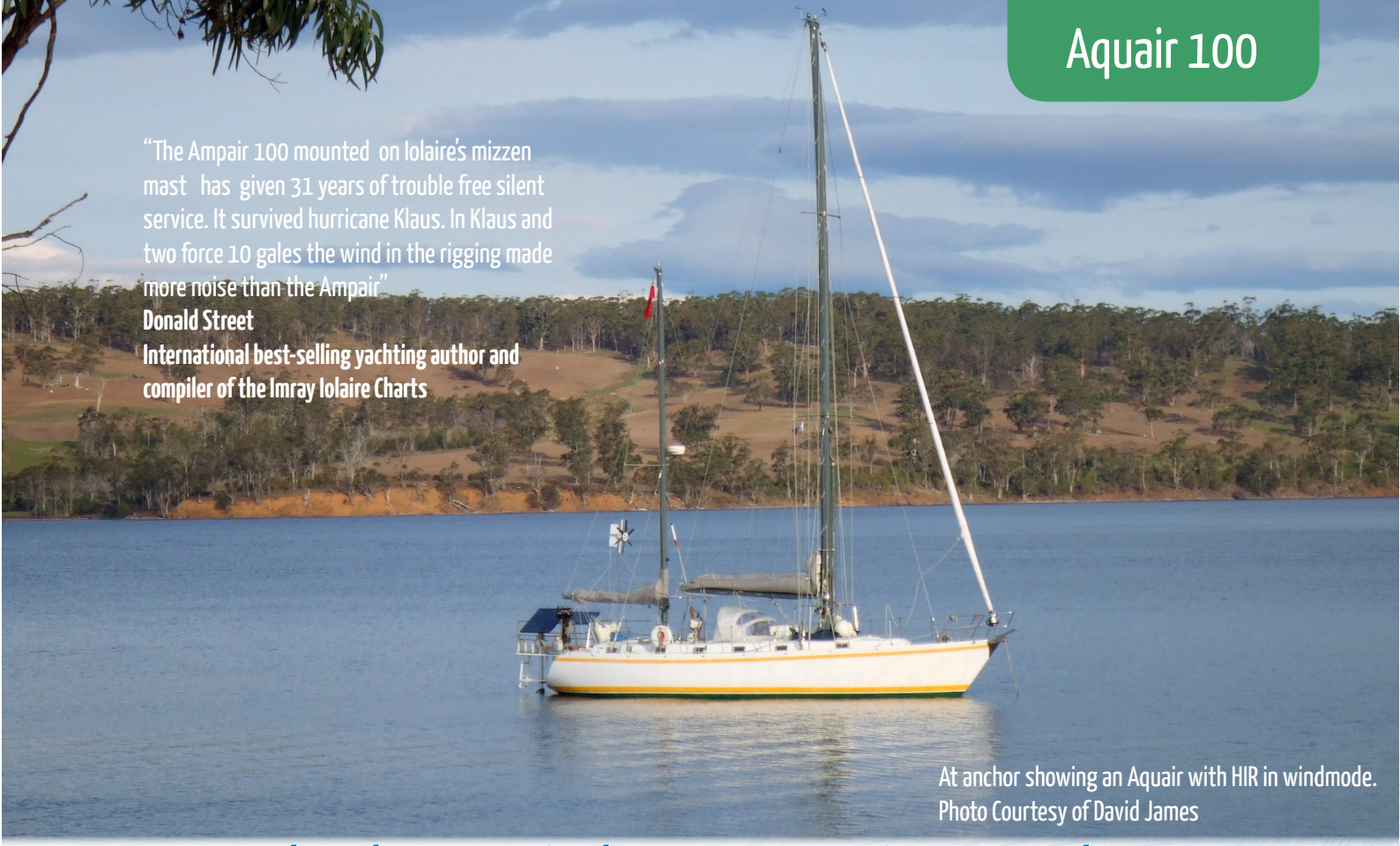
The Aquair 100 has been reliably powering boats over long distance crossings and at anchor for 35 years. Mounted to the stern of the boat and trailing a towed water turbine on 30 metre line, the unit provides over 6 Amps continuously at 7 knots. At anchor, the unit can be converted to run as a wind turbine. Unlike our competitors, Ampair have maintained a very small form factor for the Aquair making it the smallest hybrid generator on the market. If you are making an ocean crossing the Aquair 100 is perfectly suited.

Water Mode - The Aquair 100 is designed for yachts cruising at 4-15 kts. The standard pitch turbine surfaces at 7kts and skips at higher speeds, a coarse pitch turbine is used on yachts which sail at 8-12 kts. At 7kts the turbines drag is 17 lbs: it will not noticeably slow the yacht . The standard stainless steel gimbal ring mounting provides a simple and automatic alignment method and can be rigged into the push-pit or mounted in the optional frame for boats without a push-pit. The shaft connector is designed to break to save the generator and push pit if the turbine becomes trapped.

Wind Mode - Using a "rope only", hoist-in-the-rigging system (HIR). Halyard lifts the Aquair 100 away from busy the cockpit into clear air. No noise or vibration to worry about! A pole mount option is available for yachts with stern gantry or similar. A single electrical connection can then serve the unit in both wind and water modes.

Advantages - Use of the Aquair 100 greatly reduces the frequency of engine running to recharge service batteries. The turbine generates sufficient power to run an autopilot, maintain navigation equipment or support a fridge. It produces a continuous output of up to 6 Amps at 12 volts. Its permanent magnet alternator with built in rectifiers has no commutator brushes and the windings cannot overheat so it requires no thermal cut-outs or protection.

Regulator - The Aquair 100 can be used without a regulator in water mode as you can just pull in the line if the batteries are charged, if you prefer autonomy and will also use the turbine in wind mode any of the 100 series regulators can be used.



"The Ampair 100 mounted on Iolaire's mizzen mast has given 31 years of trouble free silent service. It survived hurricane Klaus. In Klaus and two force 10 gales the wind in the rigging made more noise than the Ampair"
Donald Street
International best-selling yachting author and compiler of the Imray Iolaire Charts

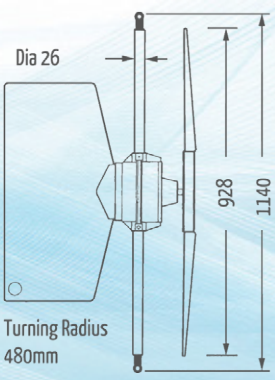
At anchor showing an Aquair with HIR in windmode.
Photo Courtesy of David James

In water mode, the Aquair does not require a regulator

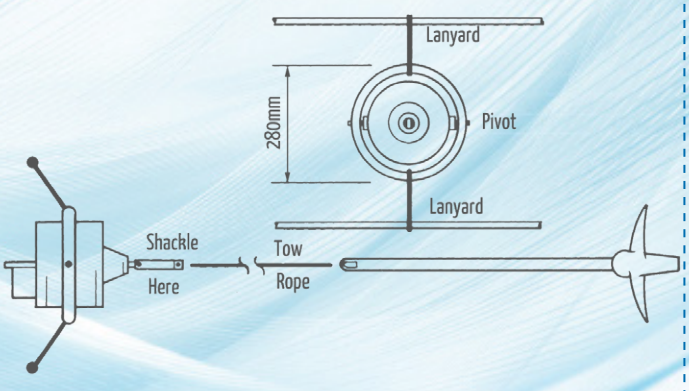
Key Specification

Power Rating	5 Amps 12V at 3m/s (6 knots) waterspeed
Voltage Options	12, 24 or 48 V DC
Output	Rectified DC
Start-Up Water Speed	3 Knots
Weight	10kg Generator - 3kg Turbine
Propeller	Standard 7-8 Knots or High Speed 8-12 Knots
Housing	Die Cast Aluminium
Survival wind speed (3s gust)	70 m/s (136 knots)

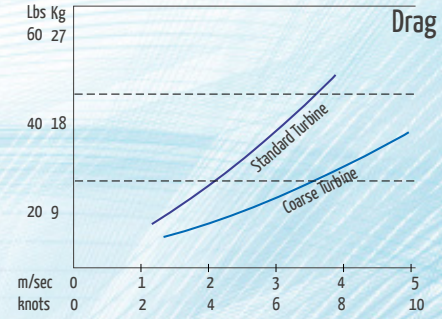
Dimensions

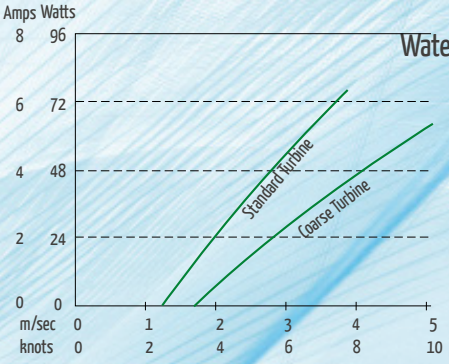


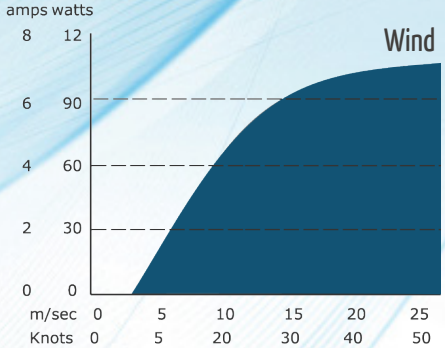
Wind mode



Water mode







Compared with the entire test group (large and small-rotor units), the Ampair was very well constructed and exceptionally quiet.
Practical Sailor, Marine Testing

Ampair 100 - Legendary performance - Stormproof dependability

Released in 1972, the Ampair 100 was one of the first marine wind turbines and has evolved to become the world's most dependable small wind turbine. The design has barely changed in 40 years which shows that we got it right first time.

Performance- Available in 12, 24 and 48V, the Ampair 100 produces maximum efficiency at normal everyday wind speeds (7-18 knots) yet due to its self-regulating blade design still delivers 100W continuously in any storm force wind.

Reliability – The Ampair 100 is constructed of solid cast aluminium with a marine-grade powder coated finish. It's unique design ensures that it never needs to be turned off or 'roped off' in a storm and can be left running without worry.

Power Regulation - The 100 series regulators give the owner options to add solar panels and charge up to three separate battery banks all from a box no bigger than a paperback book.

Support - Ampair marine turbines come with a 5 year warranty as standard well as AmpairCare[tm] - your access to lifetime worldwide technical support.

Having been close to boats with other turbines, they do seem to howl in the wind. We have Ampair 100 which is very quiet and reliable and they are very nice people to deal with. We also have the towing version [the Aquair] which is a good backup for downwind sailing!
Alan Taylor

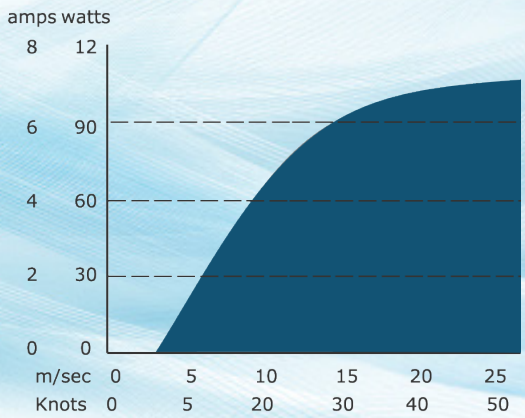
Picture courtesy Northanger (www.northanger.org)

Technical specification

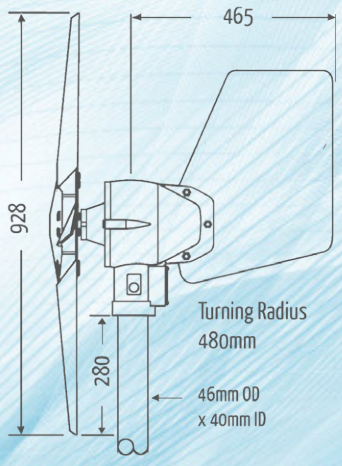
Key Specifications

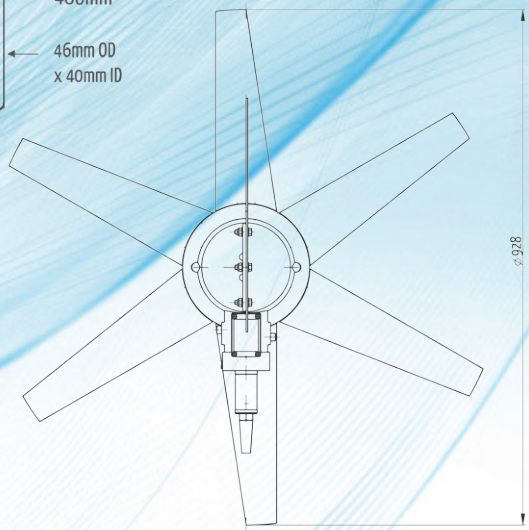
Power Rating	5 Amps 12V at 10m/s (20 knots)
Voltage Options	12 , 24 or 48 V DC
Output	Rectified DC
Start-up Windspeed	3 m/s (6 knots)
Turbine Diameter	928mm (36.5")
Blades	(6) Glass filled polypropylene
Housing	Die Cast Aluminium
Weight	12.5 kg
Survival wind speed (3-sec gust)	70 m/s (136 knots)

Power Curve



Dimensions





The Ampair equipment cost more than those available from Ampair's competitors, but you do not need to look very hard at all when comparing designs to quickly realise that these Ampair products are definitely built to last a long time in a marine environment.
C J Wells, narrowboat 'Belle'

Ampair 300, high power with Powerfurl[tm] high wind protection

Following on from the Ampair 100's success, the Ampair 300 combines elegant looks with quiet operation - and with its high power output, it is ideal for larger yachts.
It's also the smallest turbine on the market to have automatic pitching blades, these ensure that the turbine is protected and generation is maintained in high wind speeds.

Performance - Available in 12, 24 and 48V, the Ampair 300 produces the high power output needed for larger vessels or smaller vessels where sailors live aboard frequently.

Reliability - Co-ordinated mechanical pitch control is typically used on much larger turbines and is unique on a turbine of this size. The Ampair 300's Powerfurl[tm] blade pitch control technology allows optimium performance in all wind speeds while also providing vital protection in high winds, low noise levels, and reduced vibration.

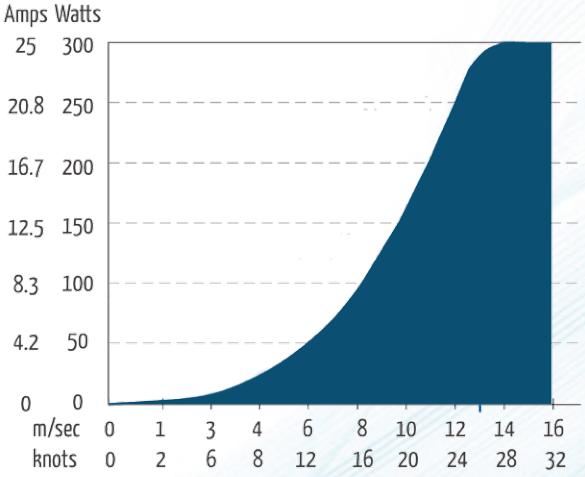
Power Regulation - A powerful, low-speed alternator converts the turbine output to 3 phase AC. This allows the use of lighter cables to feed the regulator whilst minimising voltage drop and power loss. The VS-50 charge control regulators used by the Ampair 300 include an onboard ammeter, voltmeter, fuses, dumploads and an optional 25A channel for connecting solar panels.

Support - Ampair marine turbines come with a 5 year extended warranty as standard well as AmpairCare[tm] - your access to lifetime worldwide technical support.

This yacht mast broke, while sitting tied up in Mackay harbour, by pure pressure of the wind during a tornado. The Ampair 300 is unscathed, the "other turbine" to the left is broken. No wind rating is given for Ampair, "Storm Proof" says it all.
Marty Still, Australia

Technical specification

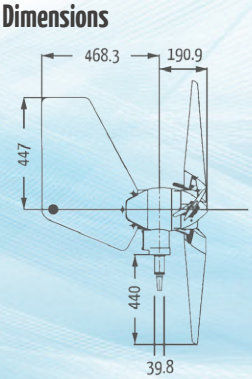
Power Curve

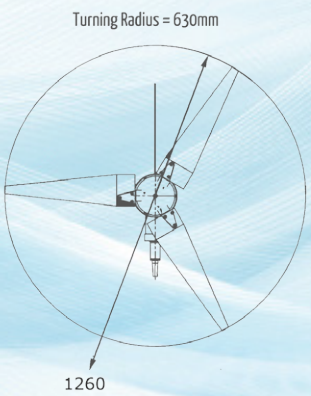


Turbine

Nominal power	300 Watts
Rated wind speed for nominal power	12.6 m/s (25 knots, or 29 miles per hour)
Cut in wind speed	3 metres per second (6 knots, or 6.9 miles per hour)
Rotor diameter	1260 mm (49.6")
Number of blades	3
Blade material	Glass reinforced polypropylene
Rotor speed	500-1400 rpm
Generator type	Permanent magnet, three phase with external rectifier
Voltage options	12 , 24 or 48 volt DC
Speed regulation	Blade pitch control above 13 metres per second
Weight	12 kg
Housing	Die cast aluminium (powder coated)
Survival wind speed (3-sec gust)	70 m/s (136 knots)

Dimensions



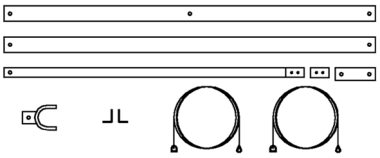


Charge Control Regulator

Power regulation	Blade pitch control and dump load
Meters	Analog voltmeter and ammeter *
Dump load	2 x 180W (can be externally mounted)
Turbine stop switch (park brake)	Use to stop turbine for maintenance in low winds
Isolation	Park brake / source and battery fuses

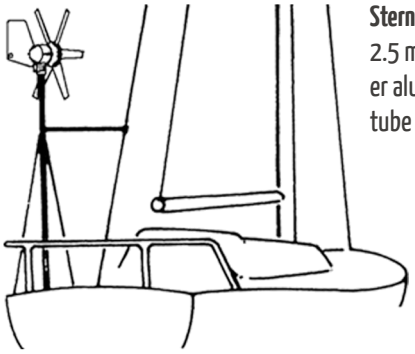
* no voltmeter in 48V version

Mounting options



Stern Mount - Ampair 100
Two aluminium poles and joiner, backstay strut, stainless steel wire side stays, c/w all necessary fittings. Places blade tips 2.1m (7') above base for safety.

Stern Mount - Ampair 300
2.5 meter freestanding pole using thicker aluminium tube with stainless steel tube outriggers and gimble base.



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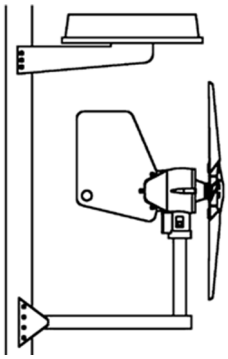
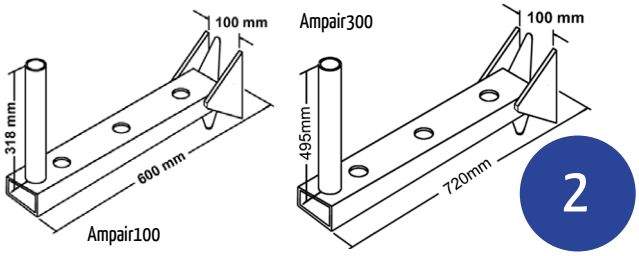


Mizzen Bracket - Ampair 100/300
If the masthead is not available then a mizzen bracket can be used. Constructed from 100 x 50mm box section to withstand the torsional loading from any wind direction. Can be bolted, riveted or clamped to masts of varying diameter.



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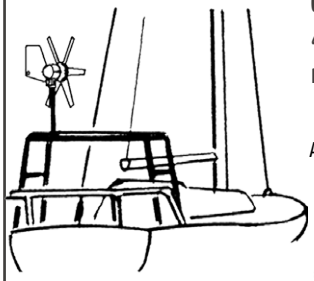
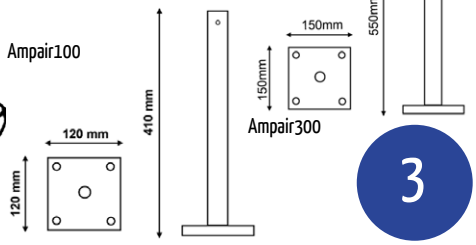


Gantry Mount
400mm aluminium pole and base mounting flange.



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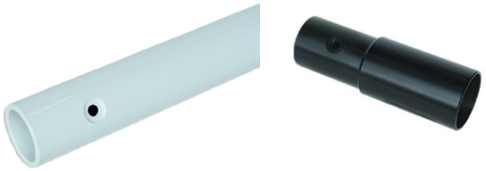
Custom mounting accessories
DIY 48mm OD aluminium poles drilled to suit our turbines.
Pole adapters to convert a variety of tube diameters to the required Ampair 40mm yaw shaft



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Electrical accessories

Ampair provide a full range of electrical components to ensure that your installation needs are met.
Deck glands, connectors, fuses, ammeters, voltmeters, solar panels and extra cable can be supplied with your order.

View our main catalogue or website for a full list. We design and manufacture in the UK so if its not in our catalogue then we may be able to help with some custom parts

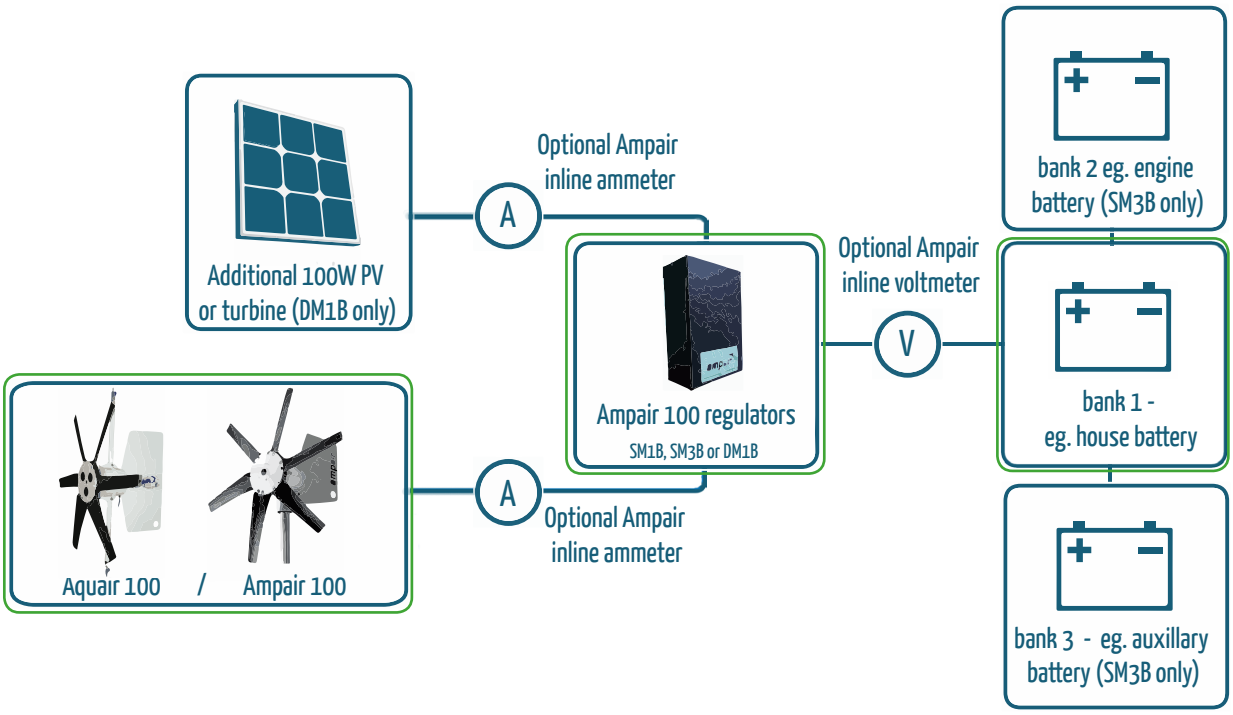
Spare Parts

Don't get caught out at sea! spare parts can be an essential part of your order if you are planning long trips.

Ampair has a suggested list of long and short term spares for each of our turbine models.

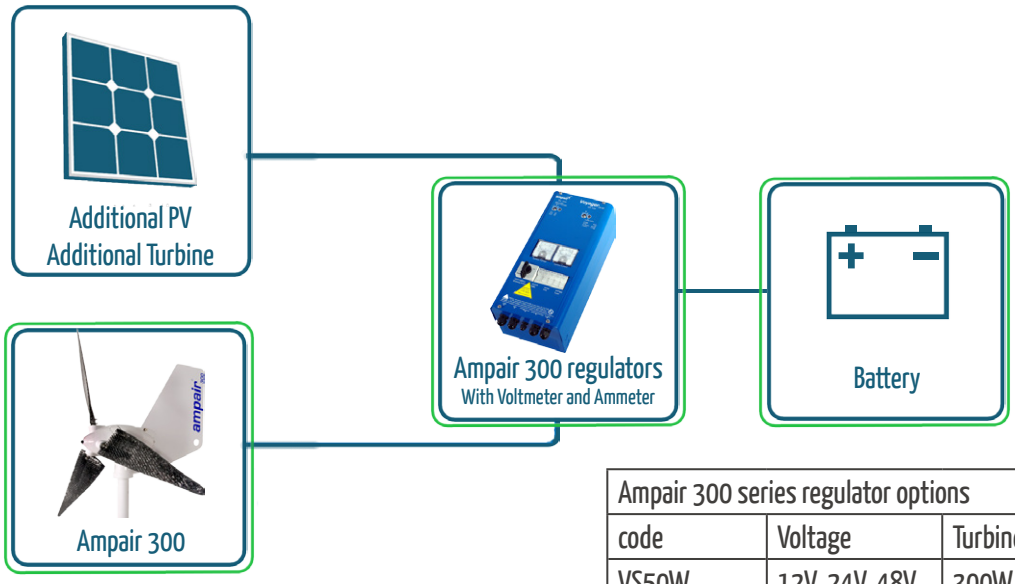
View our main catalogue or website for a full list.

Ampair 100 / Aquair 100 electrical installation options

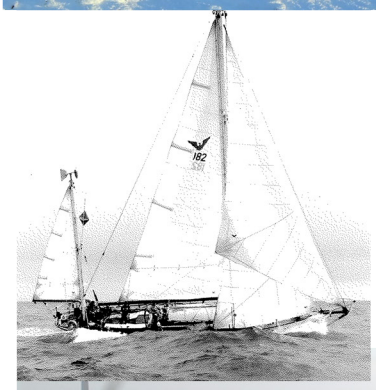


Ampair 100 series regulator options			
code	Voltage	Inputs	Output
SM1B	12, 24, 48V	1 x 100 Watt	single battery bank
SM3B	12, 24V	1 x 100 Watt	upto three separate battery banks
DM1B	12, 24V	2 x 100 Watt	single battery bank

Ampair 300 electrical installation options



Ampair 300 series regulator options				
code	Voltage	Turbine Input	Solar PV Input	Output
VS50W	12V, 24V, 48V	300W	-	single battery bank
VS50WS-12	12V	300W	300W	single battery bank
VS50WS-24	24V	300W	600W	single battery bank
VS50WS-48	48V	300W	1200W	single battery bank



ampair®

since 1973

Ampair authorised distributor

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