

powerfull & efficient electric inboard engines

We recommend not to install cheaper DC (brushed or brushless) motors, as brushes and magnets tend to wear out or corrode. The purchase of an advanced AC induction – motor system is a sustainable life time investment for your boat.



aquawatt

advanced electric boat propulsion

Aquawatt offers the world's most unique high powered electric marine propulsion systems for recreational boats to date. Instead of petrol smell or loud noise a high tech induction motor provides clean power with no maintenance and full thrust at all rotation speeds. Keep your engines room clean! If you are looking for a real sustainable investment, this is the solution for any motor- or sailing boat. The huge advantage compared to a petrol or diesel engine is the high torque at all speeds and the variability of your power source. Traditional lead acid batteries, advanced lithium batteries, solar panels or even a gas- or diesel generator. Your boat can be adapted to any new technology without the need of changing the main propulsion system. This system will still be state of the art in twenty years!



13 m|10 tons|2 x 10 kw inboard|9 knts

Did you know? The world's largest new cruise ships are equipped with electric induction-engines!

The installation of any inboard motor system is not “rocket science”, but should be planned and executed by a boat builder or a experienced person. If this knowledge is not available, we recommend the use of our powerful outboard motors which can easily replace any petrol outboard engine. The high quality inboard systems are produced individually, so an option with two motors mounted in series for double power is possible as well as other tailor made adaptations for special requirements.

Distance of the mounting rails width is 500 – 600 mm for all engines. Allow 500 m space in length for water cooled versions and 620 mm for air cooled versions. See manual.



All information subject to change without prior notice.
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► 10 KW | 48 V complete system | high efficient for solar cats

AC electric motor/incl. blower
 AC controller 48 V / 350 A
 Size: IEC 160
 Voltage supply: 48 V DC (51.2 V)
 Power: 10 KW / 1000 rpm (18 hp)
 Weight: 80 kg (motor)
 8 kg (controller)
 Torque: 95 Nm | Power input 11.5 KW
 Air cooling on motor and controller
 Shaft: 30 mm
 Recommended propeller: 13-16'
 ♦ Perfect for cats upto 15 m / 7-9 knts
 See www.all4solar.com.au



Special for solar powered cats (2-10 KW)

► 15-25 KW | 96 V complete system | replaces 20-35 HP diesel

AC electric motor | air cooled
 AC controller 96 V | 450 A
 Size: IEC 132 (S)
 Voltage supply: 96 V DC
 Power: 25 KW max. (1/2 h 2500 rpm)
 15 KW nom. 2000 rpm
 Weight: 50 kg (motor)
 8 kg (controller)
 Torque: 75 Nm / 100 Nm (1/2 h)
 Air cooling (via hose) motor only
 Shaft: 30 mm (incl. coupling)
 Recommended propeller: 13'
 See www.all4solar.com.au



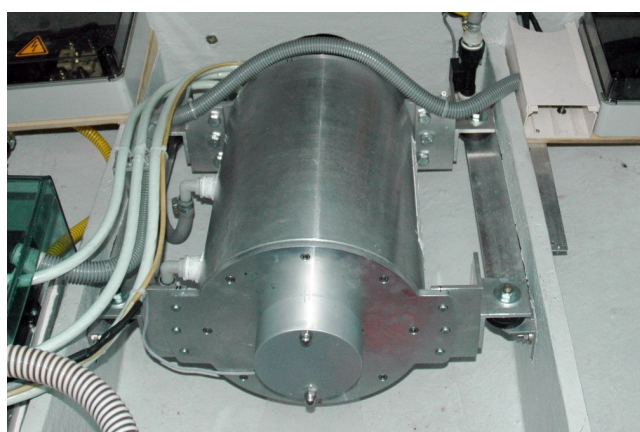
Joy Stick optional



use standard shafts & props

► 30 KW | 96 V system

AC electric motor/incl. water pump
 AC controller 96 V | 550 A
 Size: IEC 132 (M)
 Voltage: 96 V DC
 Power: 30 KW max. 2500 rpm
 25 KW nom. 2000 rpm
 Water cooling | pump 12 V (incl. DCDC)
 Motor and controller 12 l / min.
 Weight 60 kg motor
 10 kg material (approx.)
 Torque: 120 Nm
 Shaft: 30 mm / Thrust bearing included!
 Recommended propeller: 13'
 See www.all4solar.com.au



Heat exchanger for salt water use required!

► 40 KW | 144 V system

AC electric motor/incl. water pump

AC controller 144 V | 450 A

Size: IEC 160 (M)

Voltage: 144 V DC

Power: 40 KW max. 2000 rpm

25 KW nom. 1600 rpm

Water cooling | pump 12 V (incl. DCDC)

Motor and controller 12 l / min.

Weight 85 kg motor

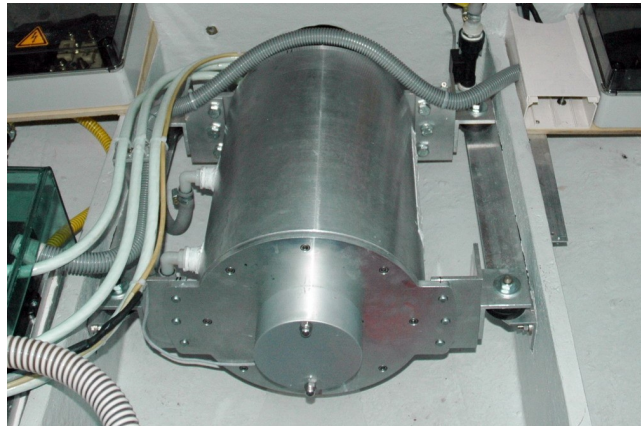
10 kg material (approx.)

Torque: 150 Nm

Shaft: 30 mm / Thrust bearing included!

Recommended propeller: 15'

See www.all4solar.com.au



Heat exchanger for salt water use required!

These advanced AC motors and the controllers have been specially designed and produced for the aquawatt boat propulsion systems. Each motor is fully enclosed.

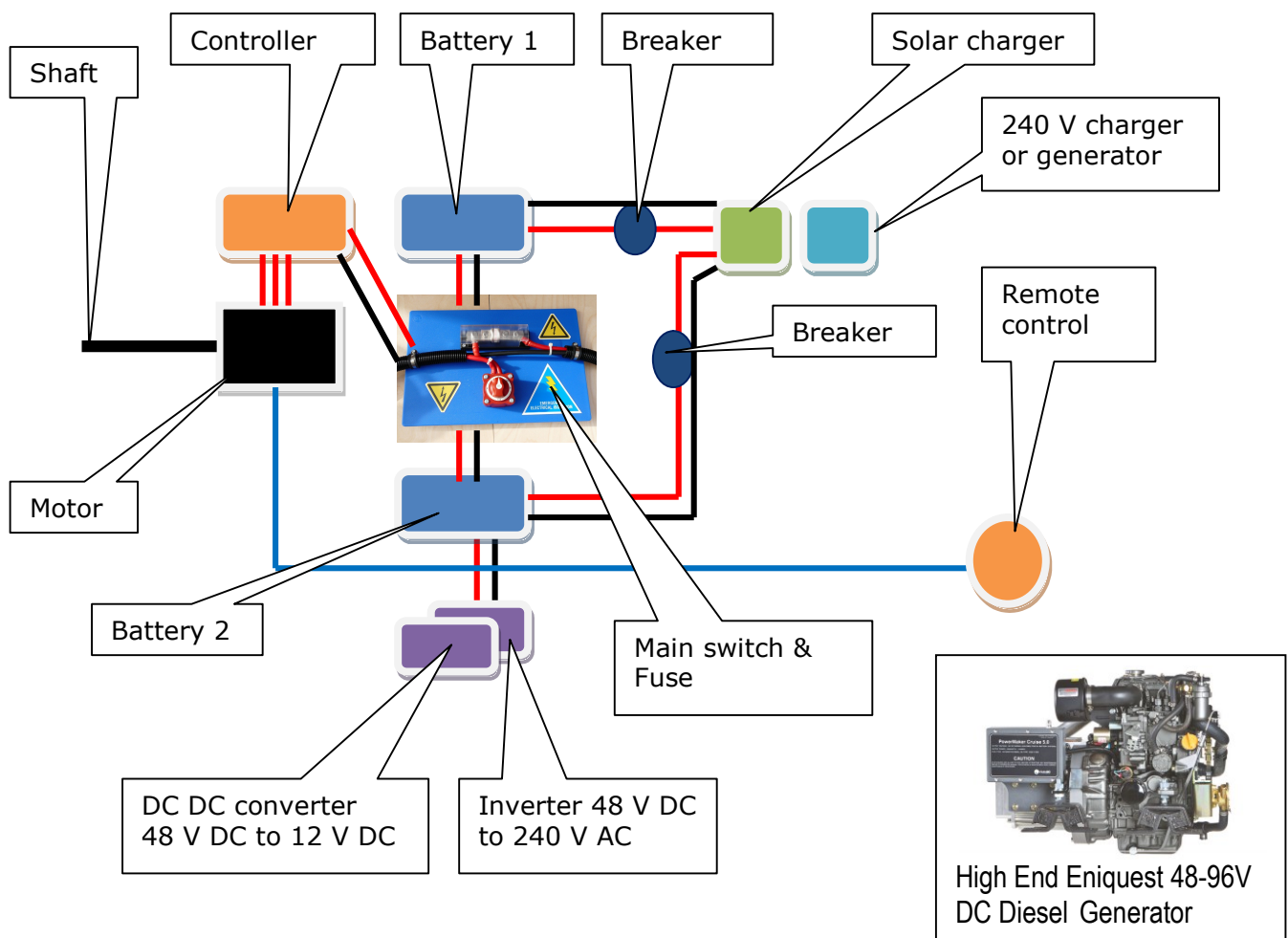
The performance curve of the aquawatt engines is almost linear to the rotation speed on a wide range. A petrol or diesel engine rarely runs at its best working speed and needs a variable gear box to adapt at least some of these losses. The AC motor does neither need a gear box nor a dedicated rotation speed to run at the most efficient point of operation.

The full torque is available from as low as 200 rpm to 2000 rpm (range depending on type of motor) and then falls due to the higher speed somewhat which has no influence on the overall efficiency of 85 – 90%.

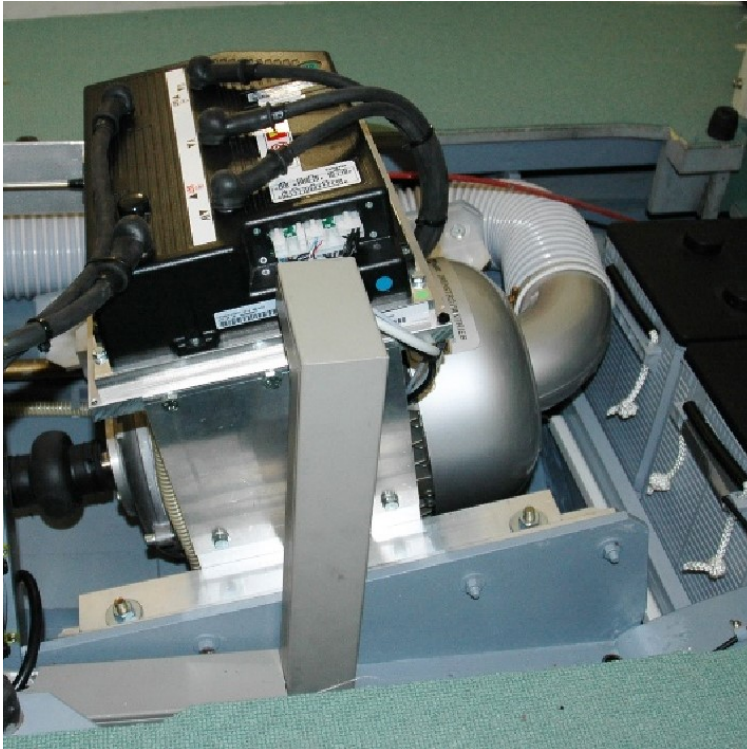
When more thrust is needed at lower speeds the motor controller sensors this and increases the power output. If more speed is possible at the throttle position chosen, the controller optimizes the power output to get to that speed.

Setup example for 48 V 10 KW system with lithium battery (LIFEPO4)

Example: 12 m catamaran/4 tons/4-5 knots = 2 KW h = 9 hours on 20 KW h battery
12 m catamaran/4 tons/6-8 knots = 6.5 KW h = 3 hours on 20 KW h battery
12 m catamaran/4 tons/10-12 knots = 14 KW h = 1.2 hours on 20 KW h bat.



► Checklist Aquawatt Electric AC Inboard Engines



Props for shaft drives

Shaft diam: 30 mm

Prop size: 13-16'

Prop pitch: 18 – 24'

Change of pitch 1' equals to 150-250 change of rpm

www.solas.com.au

www.kiwiprops.co.nz

www.ozpropellers.com.au

www.seahawk.com.au

- ☐ Type of engine
 - ☐ 10 KW (highly efficient cats)
 - ☐ 15 – 25 KW replaces 25 – 40 hp diesel engine
 - ☐ 25-30 KW replaces 40 – 60 hp diesel engine
- ☐ Space in engine room (min. 500 x 500 x 400 mm required – see dims.)
- ☐ Distance to batteries (for main cables)
- ☐ Diameter of shaft
- ☐ Size of propeller
- ☐ Max. rotations per minute of engine / prop (1000 – 2500)
- ☐ Type of batteries
 - ☐ lead acid AGM
 - ☐ lithium LiFePO4 (recommended)
- ☐ Size of batteries in KW h (ask for a detailed energy calculation)
- ☐ Generator (optional) Diesel / Petrol 4 KW / 5-6 KW / 8 KW / 10 KW
- ☐ Solar panels (optional)
- ☐ Grid charger for batteries (included with lithium battery packs)
- ☐ Budget: Just send us your requirements and we will send you a quote.

For one 20 HP inboard engine with a 10 KW h lithium battery pack and a 4 KW AC generator budget from around AU\$ 29'000.00 including all material & GST, excluding installation, shaft and propeller.

All information based on specific setup / boat types. Any calculation needs to be verified for the individual setup.