SILENT SAILING

FALCON

Crafted for **pure**
electric propulsion.

eptechnologies.dk

EPTechnologies
Energy Power Technologies

EUDP

Unlike conventional models that typically adapt combustion-engine platforms for electric use, FALCON is designed exclusively as an electric propulsion system. This innovative approach results in a compact, lightweight build that minimises drag, improves efficiency, and optimises onboard space for additional battery capacity. Weighing approximately 50 kg less than traditional combustion engines, FALCON extends range, boosts performance and significantly reduces its environmental impact.

Redesigned steering for effortless manoeuvrability

FALCON's steering system was completely re-engineered to keep the motor block stationary, so only the propeller and hub rotate. This innovation protects the motor's sensitive components while the 360° rotating propeller hub provides outstanding handling, even in tight spaces.

The motor is highly customisable, allowing for tailored shaft lengths to fit any boat geometry, and the cover plate's colour and material to match your boat's design.

Danish quality and performance

Developed and manufactured in Denmark, FALCON benefits from close quality control and efficient lead times. Every component is carefully selected to support the motor's performance without adding unnecessary weight or volume.

With access to an in-house testing pool and our own test boat, we could commence thorough testing and verification right from the start of development.

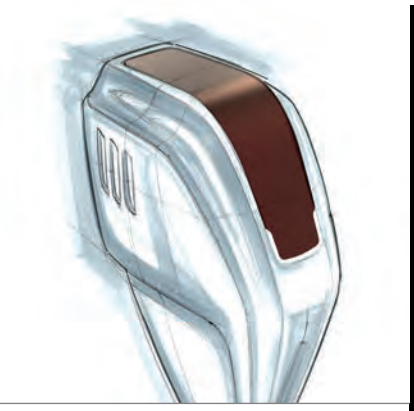
Inspired by nature

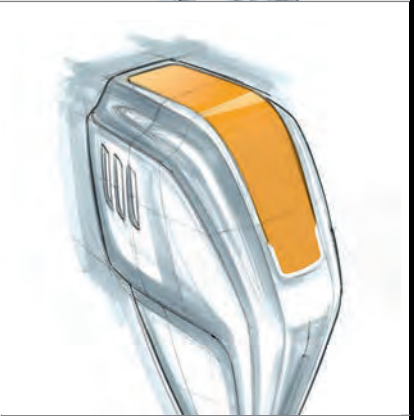
The name FALCON – inspired by the fastest animal in the world – reflects the powerful, efficient, and dynamic qualities of the motor. It's designed for swift and graceful movement through the water, and the propeller's 180-degree turning capability brings to mind the agility and power of this extraordinary bird.

FALCON

OUTBOARD MOTOR
FALCON 130x & FALCON 230x

Additionally, the top plate opens up endless possibilities, to give your boat an extra touch of personal expression.





Specifications

	Falcon 130 Outboard	Falcon 230 Outboard
Voltage	400 – 800 VDC	550 – 850 VDC
Continuous power	130 kW – 310 NM	230 kW – 600 NM
Peak power:	220 kW – 525 NM	430 kW – 950 NM
Continuous motor speed	4000 rpm	3600 rpm
Propeller speed	3000 rpm	3000 rpm
Peak propeller speed	4300 rpm	3600 rpm
Propeller hub	360° rotating	360° rotating
Weight	160 – 200 kg	xxx – xxx kg

Advanced technology features

The FALCON family features the latest engine technology, including a 2-circuit cooling system with heat exchangers integrated into the leg, a mechanically driven centrifugal pump, and a Can bus electric servo control system with trim tilt capabilities. Thanks to its inbuilt DC/DC power supply, FALCON requires just two high-voltage cables and a Canbus control cable for easy installation.

Discover the future of boating—contact us today to learn more about the FALCON electric outboard motor.

FALCON i

Most tested electrical system built on a frame - very easy and quick assembly. We have developed a system to meet the shipyard‘s needs for an efficient and safe way to build an electric boat with no difficulties.

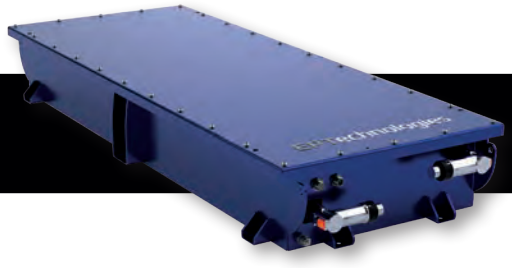
EPTechnologies system is a complete product with an easy plug and play system. Our systems are fully tested before shipping from the factory and pass all quality tests on our test bench. We set the benchmark for future electric propulsion systems and, with 9 years of experience in electric propulsion and power boats, we are the market leader.

Our flexibility means that we adapt the system to meet the shipyard‘s wishes and expectations. This makes it easy for both the boat builder and the customer to get a system that satisfies their wishes and needs.

FALCON i

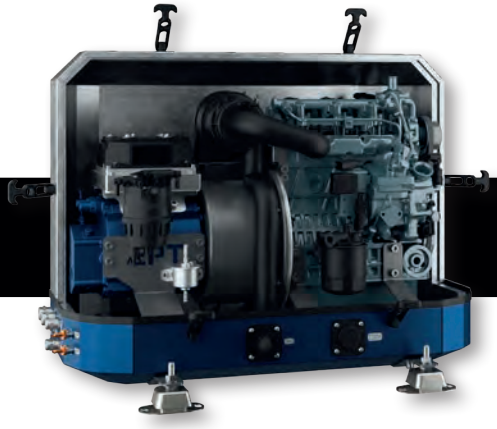
DROP-IN UNIT WITH BATTERY FOR SHAFT, Z-DRIVE, JET-DRIVE

- Power 40 – 400 kW
- Battery: 64 – 500 kWh
- Costom Design battery boxes
- RPM 800 – 6000
- Quick and easy installation
- Watercooled
- Custom layout
- With thrust bearing for axle system



EPT HV MARINE BATTERIES

- One of the worlds lightest batteries made with these power ratings
- 5.2 kg per kWh
- Voltage up to 900 V
- IP 65, 67 on request
- ALU casings, powder coated. Stainless steel top cover, powder coated.
- With pre-charge, fuses, main relays and state of the art BMS
- Parallel strings can have optional redundant pack control units PCU with double PLC’s for back up
- DNV homologation in process
- More than 20 MWh manufactured and sold already



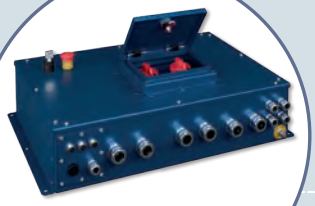
DC MINI GENERATOR

Switches & Sensors

Charger

Throttle

PLC
CONTROL SYSTEM



BATTERY/STRING
CONTROLLER

Inboard

Display/HMI

Outboard

DC/DC
Board Supply

Battery bank

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Technical comparison of axial flux and radial flux BLDC (Brushless DC) motors:

Radial Flux Motor (RFM)

The magnetic flux flows **radially** from the rotor center outward toward the stator.

PROS:	CONS:
Mature technology – widely used and supported.	**Larger size and weight** for the same power/torque output compared to axial motors.
Proven performance in many industries (automotive, industrial, robotics).	**Lower torque density** (Nm/kg) than axial flux.
Easier to cool in standard configurations.	**Less efficient in space-constrained environments**.
Well-established supply chain – more off-the-shelf options.	
Scalable across a wide power range.	

Axial Flux Motor (AFM)

The magnetic flux flows **axially**, parallel to the shaft – often designed as disc-shaped motors.

PROS:	CONS:
High power and torque density – compact and lightweight.	**More complex thermal management** – harder to remove heat from rotor core.
Short axial length – fits tight, flat spaces (e.g., wheel hubs, drones, EVs).	**Manufacturing challenges –** tighter tolerances, higher cost.
Potentially more efficient at low speeds due to reduced copper losses.	**Less mature** – fewer suppliers, less standardization.
Good cooling surface due to flat geometry.	**More expensive magnets and materials** often required.

Use Case Summary:

Feature/Use Case	Radial Flux (RFM)	Axial Flux (AFM)
Torque Density	Lower	Higher
Power Densit	Moderate	Higher
Efficiency	High (esp. at high RPM)	High (esp. at low RPM)
Size and Weight	Larger, heavier	Compact, lightweight
Cooling Ease	Easier	Harder
Manufacturing	Easier, cheaper	Complex, costly
Maturity/Availability	Very mature	Emerging
Best Use Cases	General industrial, automotive	EVs, drones, aerospace, robotics

In summary:

- Choose Radial Flux if you want a reliable, proven, cost-effective solution.
- Choose Axial Flux if you need compact size, high torque, and cutting-edge performance, and are okay with potentially higher cost and complexity.

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