

PORSCHE

**Frauscher x Porsche
850 Fantom Air**

Press kit

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Highlights

Sustainable boating pleasure on inland waters and the open sea

- **Exclusive electric sports boat with outstanding driving characteristics.**

Porsche's approach to sustainable mobility extends beyond the car. Which is why the sports car manufacturer has collaborated with Austria-based Frauscher Shipyard to develop an exclusive electric sports boat. The 8.67-metre day cruiser based on the Frauscher 858 Fantom Air offers exceptional driving characteristics and has space for up to nine passengers.

- **The drive technology of the future Porsche Macan.**

Porsche has optimised and further developed its drive technology designed for road vehicles for use on the water. The Frauscher x Porsche 850 Fantom Air uses components of the Premium Platform Electric (PPE) on which the all-electric Macan is based. The technology includes the lithium-ion high voltage battery, a latest-generation permanently excited synchronous electric motor (PSM), and the related power electronics. Thanks to the 800-volt technology from Porsche, the electric boat can be charged at DC fast-charging stations. AC charging is also possible.

- **Design influence of Studio F. A. Porsche.**

Along with the drive technology, aspects of the project also bear the design signature of Porsche. Studio F.A. Porsche is responsible for the design of the helmstand and the resulting redesign of the main console with its throttle and integrated displays. The typical Porsche steering wheel was designed with materials suited to the nautical environment.

- **Delivery from 2024 planned.**

After the expected launch in 2024, the Frauscher x Porsche electric yacht will offer local-zero-emission and practically silent trips through harbours and bays, as well as a more sustainable way of exploring inland waterways and the open seas. The initial plan is for an exclusive first edition of 25 units, which can be pre-ordered from Frauscher and are to be delivered to the first customers from 2024. Interested parties can register at www.frauscherxporsche.com.

Summary

Powered by Porsche: exclusive electric sports boat to launch in 2024

Porsche is driven by a compelling motivation: combining performance and sustainability. And that will no longer apply to on- and off-road alone, but to the water as well. Together with the renowned Frauscher Shipyards in Austria, the sports car manufacturer has developed the Frauscher x Porsche 850 Fantom Air. Equipped with the powertrain technology of the forthcoming all-electric Porsche Macan, the electric yacht offers exceptional handling characteristics.

“We stand for state-of-the-art, high-performance and sustainable luxury – and we are redefining this concept,” says Lutz Meschke, Deputy Chairman and Member of the Executive Board for Finance and IT at Porsche AG. “Our goal is to inspire our customers and make their dreams come true. The Frauscher x Porsche 850 Fantom Air, like our sports cars, offers exceptional performance and luxury experiences.”

Porsche has adapted and further developed its drive technology designed for road vehicles for use on the water. The Frauscher x Porsche 850 Fantom Air uses components of the Premium Platform Electric (PPE) on which the new electric Macan is based. The technology includes a lithium-ion high voltage battery with a total capacity of around 100 kWh, a permanently excited synchronous electric motor (PSM) of the latest generation with a maximum output of 400 kW, and the related power electronics.

Porsche drivers are accustomed to being able to select the optimal drive characteristics for any situation with use of multiple driving modes. This is also possible with the Frauscher x Porsche, which offers the Docking, Range, Sport and Sport Plus settings.

Thanks to the 800-volt technology from Porsche, the electric boat can be charged with more than 250 kW of DC current at DC fast-charging stations. Under ideal conditions, the battery can be charged from a 10 per cent state of charge (SoC) to 80 per cent in well under 30 minutes. AC charging at conventional household and high-voltage sockets is also possible; an 11-kW charger is installed as standard.

But the electric yacht is not just powered by Porsche: Studio F. A. Porsche in Zell am See (Austria) was responsible for designing the helmstand. An original sports steering wheel from Porsche is on board. Five analogue gauges on the upper level of the instrument panel underline the Porsche look and provide an overview of the most important data. The two front seats have been redesigned by the team at Studio F. A. Porsche. In keeping with the high E-Performance, they offer plenty of lateral support. With raised backrests, integrated headrests and an embroidered crest, their look is inspired by the sports seats in Porsche sports cars.

The Frauscher x Porsche 850 Fantom Air is based on the Frauscher 858 Fantom Air day cruiser. It retains its 8.67-metre-long and 2.49-metre-wide hull almost unchanged and therefore also offers space for up to nine passengers. The swimming platform at the rear leads to a generous lounge area with two comfortable sunbathing pads. A central aisle connects the back end of the boat with the free-standing helm and the cockpit. Two more upholstered benches in the front end are equally inviting for relaxation.

The initial plan is for an exclusive first edition of 25 units, which can be pre-ordered from Frauscher and are to be delivered to the first customers from 2024. Interested parties can register at www.frauscherxporsche.com. The yacht will be built in the Frauscher Shipyard in Ohlsdorf, Austria. Frauscher is also handling all the sales logistics and the after sales management.

Incidentally, it's not the first time that Porsche has ventured onto the water: in 1959, the company presented the type 729 boat engine to the public. It was based on the four-cylinder boxer engine of the Porsche 356, with a restricted output of 52 PS.

About Frauscher

When Engelbert Frauscher founded a boat-building firm in Vienna in 1927, he couldn't have dreamed that the name Frauscher would be setting standards in international premium boat building more than 95 years later. The company's innovative ideas, precise craftsmanship and passion for the pleasure that time spent on the water can bring, is nothing short of impressive. In 2012, the family-run business moved to a new shipyard in Ohlsdorf in northern Austria. The boat builder also has sales locations in Port Adriano, Mallorca, and Port

Grimaud on the Côte d’Azur. Since 2020, Frauscher America in Miami, Florida, has been introducing US customers to the exciting world of Frauscher.

Technical data for the Frauscher x Porsche 850 Fantom Air	
CE category	C (inshore)
People	C9
Length/width (m)	8.67/2.49
Clearance height (m)	1.35
Draught with trim raised/lowered (m)	0.5/0.9
Dry weight (kg)	2,800
Electric motor continuous/peak power (KW)	170/400
Battery capacity (KWh/gross)	100
Charging capacity DC (kW)	> 250
Charging capacity AC (kW)	11
Maximum speed in Sport Plus mode (km/h/kn)	85/46
Crusing Speed (km/h/kn)	41/22
Cruising speed range (km)	45
Range with customer’s typical mix of slow, cruising and fast driving (h)	2-3 depending on driving profile

Disclaimer: Performance values are based on current test findings with two people on board. Statistical performance values are only available after complete testing.

The concept

E-Performance from Porsche comes to the water

Porsche aims to be a leader in sustainable mobility. And this ambition will not be limited to racing and road cars alone in the future. Together with the renowned Frauscher Shipyard in Austria, the sports car manufacturer has developed an electric yacht that sets new standards on the water with its characteristic Porsche E-Performance. The Frauscher x Porsche 850 Fantom Air also scores with impressive acceleration, abundant thrust, superior sustained performance and inspiring design. The Macan will also enrich the market for all-electric compact SUVs with these same attributes from 2024, just as the Taycan sports sedan did in its segment in 2019.

The yacht will be built in the Frauscher Shipyard in Ohlsdorf, Austria. Porsche is supplying three pre-assembled modules: the battery, powertrain and helmstand. In addition to the final assembly, Frauscher is also handling all the sales logistics and the after-sales management.

From idea to series-production ready

Lean and fast – an apt description not only of the eFantom itself, but also the story of how it came to be. The idea of bringing Porsche E-Performance to the maritime world arose in the spring of 2021 during a meeting with Chairman of the Executive Board Oliver Blume. Then, in 2022, the decision was made to use the drive technology of the Premium Platform Electric (PPE) and to integrate the project into the Macan series. The renowned Frauscher Shipyard in Austria was brought onboard as a partner.

Tasks were clearly distributed from the outset. Frauscher started by modifying the inside of the glass-fibre-reinforced plastic hull so that it could accommodate the drive unit in an optimal position with a low centre of gravity. At the same time, the Porsche experts at the Macan development project facility in Hemmingen near Stuttgart worked on the necessary adjustments to the motor peripherals.

Construction of the first prototype began in 2022. The prototype was then used in the testing phase. The maiden voyage took place on 22 September 2022 – on Lake Traunsee, not far from the shipyard. On 27 October 2022, the boat was presented for the first time to the

members of the Porsche Executive Board on Lake Tegernsee in Bavaria, who then gave the green light for further development and series production. Test drives on the larger Lake Garda were completed by the beginning of 2023 with Cantiere Nautico Feltrinelli, Frauscher's long-established Italian importer. The first series production boat was finished in summer 2023. As usual with Porsche, both boats were subjected to demanding endurance tests to ensure they met the exacting quality requirements.

PPE as the technical basis for the Macan and eFantom

Premium Platform Electric (PPE) is an architecture for all-electric vehicles, jointly developed by Porsche and Audi. It allows the advantages of a purely electric platform to be utilised in many ways – in terms of packaging and space, for example. At the same time, the architecture offers so much leeway in the wheelbase, track width and ground clearance that it can be used to realise a variety of models – including in different segments. This flexibility, in turn, allows Porsche models to retain their strong, independent character.

The first Porsche based on PPE will be the new Macan from 2024. Thanks to its 800-volt architecture, powerful latest-generation electric motor and state-of-the-art battery and charge management, this model offers the E-Performance that is characteristic of Porsche. The successor to the popular compact SUV will be the sportiest model in its segment. Along with reproducible best-in-class performance values, the development targets include long-range capability and high-performance fast charging.

For the top variants, the engineers are creating a dynamic, sporty driving experience with a fully variable electronically controlled rear differential and Performance styling for the rear of the car. There is also a powerful electric motor positioned behind the rear axle – the same electric motor that is used in the Frauscher x Porsche (see chapter Powertrain). It enables a rear-dominant all-wheel drive application in the Macan across a wide range. In combination with the dynamic torque distribution in the all-wheel drive, it also supports high agility when accelerating out of corners.

For “the boldest water sports ventures”: historic boat engine serves as a forerunner

It's not the first time Porsche drive technology has found its way onto the water: after a trial phase on Stuttgart's Lake Max-Eyth, the company presented a boat engine to the public in 1959. The 1.6-litre four-cylinder boxer from the Porsche 356 had been modified, with the engine output restricted to 52 PS, down from 60 in the car.

Known as the type 729, the project featured an innovative thermal concept. Using a heat exchanger, the exhaust air from the engine could be used to heat the boat. The contemporary brochure of March 1960 confidently addressed boat owners: “With the Porsche boat engine, you build a veritable buffalo of robustness into your boat and thus ensure the success of your boldest water sports ventures.”

Expert interview

“Uncompromisingly fast and beautiful”

Interview with Jörg Kerner, Vice President Product Line Macan, and the two Managing Directors of Frauscher Shipyard. Stefan Frauscher is responsible for Marketing & Sales while his brother Michael is in charge of production.

If Porsche ventures onto the water with an e-boat, certain expectations go along with that. What makes the Frauscher x Porsche eFantom so special?

Jörg Kerner: With the all-electric Macan we want to provide the sportiest model in its segment. This is our stated development goal. And we have carried this ambition over to the boat via every detail. The eFantom offers characteristic Porsche E-Performance with outstanding driving characteristics.

Stefan Frauscher: Electric drives are also increasingly important in our industry as well. On the one hand, they are increasingly enjoying more social acceptance, and on the other our customers are very happy about the advantages of electromobility, namely that it's quiet, odourless and reliable.

Michael Frauscher: We share the same standards as Porsche in terms of performance, design and innovation. Our boats must be uncompromisingly fast and beautiful. The eFantom is a real revolution. I've been driving boats all my life and this one is by far the best that I've ever driven. No boat with a combustion engine can keep up.

Jörg Kerner: The unique handling characteristics have been achieved through the low central positioning of the drive and the batteries in the hull. For turns, we have actually reduced the torque to enable comfortable control of the boat.

Were there any particular development challenges?

Jörg Kerner: The development process for the central control unit was quite involved. Because you can't capture wheel speeds on the water and you don't have things like a parking brake, for example, there were a lot of open interfaces. Or to stick with our example:

the Macan only charges when the parking brake is engaged. We first had to generate that signal and others that were missing.

Michael Frauscher: We had to adjust the hull of the boat in the stern area to install the battery, which would not have worked otherwise. So the battery is now sitting where the fuel tank is normally located, but it needs more space in the middle part of the boat. Our team had to overcome two challenges to be successful: first, it was important to build a boat that stays within the target weight of the ICE variant. Second, we didn't want to compromise on the comfort of the boat.

Speaking of comfort – for what type of use was the eFantom developed?

Stefan Frauscher: Our boat is perfect as a day cruiser for a relaxed swimming trip, for example, or as a tender for a super yacht to make an excursion to a coastal town.

Jörg Kerner: And for water skiing or wakeboarding. This sport hasn't been possible with most other e-boats on the market. Now you can do it perfectly and without the smell of the exhaust.

How exactly did the collaboration with Porsche come about?

Michael Frauscher: I still clearly recall when Porsche approached us in October 2021. The company was looking for a suitable boat builder that could work with them to take Porsche technology from the road to the water. We at the Frauscher Shipyard were still looking for first-class technology to increase the performance of our electric boats, so everything just fell into place. Just two years later we have developed a state-of-the-art electric boat and I can sum up by saying that the depth at which Porsche started its engineering is not reached by other manufacturers, even at the end of their development.

Powertrain and battery

The efficient and powerful electric motor from the Macan

The powertrain of the eFantom, with a latest-generation permanently excited synchronous electric motor (PSM), comes from the all-electric Porsche Macan. Porsche is using the most powerful variant of the future all-electric compact SUV for the technology transfer. In the yacht, the system power is throttled to 400 kW. A shaft transmits the power from the electric motor to the Z-drive. Although the motor is located in the hull of the boat, the Z-drive can be controlled directly like an outboard with a shaft and screw.

State-of-the-art power electronics optimise the efficiency of the electric motor: silicon carbide (SiC) is used instead of silicon as the semiconductor material in the pulse inverter. This significantly reduces switching losses in the PWR and enables higher switching frequencies.

The electric motor sits in the back of the boat while the controls are housed in a special waterproof box emblazoned with the Porsche logo. The lithium-ion battery, likewise adopted from the Macan, is also located under the lounge area at the rear end. The total gross capacity is around 100 kWh. For the suspension in the support frame, the experts at Porsche opted for wire rope mounts, which are particularly good at absorbing the shocks that inevitably occur while driving fast and in waves. The Frauscher x Porsche 850 Fantom Air glides comfortably over the water despite its sporty overall orientation.

Porsche drivers are accustomed to being able to select the optimal drive characteristics for any situation with use of multiple driving modes. This is also possible with the eFantom, which offers the Docking, Range, Sport and Sport Plus settings. The modes change the characteristic curve of the throttle response while also featuring different speed limits. For example, in Docking mode for harbour driving, the speed is limited to 8 knots (the equivalent of 15 km/h).

The optimal cruising speed is 41 km/h (22 knots); at this speed, the boat can cruise for around an hour on a battery charge. Naturally, the range is correspondingly shorter when driving at or near the top speed, which is 85 km/h (46 knots) in Sport Plus mode. Typical outings with a mix of slow and fast driving allow a driving time of two to three hours – depending on the driving profile.

Thanks to the 800-volt technology from Porsche, the electric boat can be charged with over 250 kW of DC current at DC fast-charging stations. Under ideal conditions, the battery can be charged from a 10 per cent state of charge (SoC) to 80 per cent in well under 30 minutes. AC charging at conventional household and high-voltage sockets is of course also possible and will, according to the Porsche experts, be the most common use case as the infrastructure is available in the vast majority of ports. There is an 11-kW AC charger on board as standard. The charging ports are located on the front side of the left bench.

Interior design and control concept

With the Porsche Driver Experience

Along with its drive technology, parts of the Frauscher x Porsche 850 Fantom Air also bear the design signature of Porsche. Studio F. A. Porsche was responsible for the design of the helmstand. Although the requirements in the automotive and nautical sectors naturally differ, the designers were inspired by some elements of the future Macan as well as the iconic 911 sports car.

The high-gloss black instrument panel sits behind the frameless tinted acrylic glass windscreen. The side ends are designed as winglets – stylistically a nod to the 911 and at the same time are practical grab handles. Setting the course to starboard or port is controlled using the wheel, which is a typical Porsche steering wheel that was designed with materials suited to the nautical environment. The artificial-leather-clad rim is more resistant to salt water and sun cream. In classic Porsche fashion, the start button is to the left of the wheel. On the right behind the wheel is a control panel for the bow thruster. This allows the boat to be moved laterally, which simplifies mooring and casting off.

For ergonomic reasons, the driving mode switch, otherwise placed directly on the steering wheel of Porsche sports cars, is positioned in the centre console below the throttle. This is because sport boat drivers usually have their right hand on the throttle. In the eFantom, this enables particularly easy access to the Docking, Range, Sport and Sport Plus modes (see chapter Powertrain). The trim function can be operated via the thumb switch on the left of the throttle.

Five analogue gauges on the upper level of the instrument panel underline the Porsche look and provide an overview of the most important data. In the middle is the slightly larger analogue rev counter including digital speed indication. The indicators for the rudder position and the trim are on the left, and on the right the charge level and the battery temperature are displayed.

A 12-inch multifunction display with touch operation offers extensive display options. The model installed is the Raymarine Axiom+. A welcome gesture with the Frauscher x Porsche logo greets the crew at the start. The main menu offers an individualised view with essential

information about the Porsche powertrain. Boating-specific apps such as the map plotter are also integrated into the display and operating concept.

The key is from the new Macan generation. It is inserted into a specially designed mount in the boat below the throttle.

The two front seats have been redesigned by the team at Studio F. A. Porsche. In keeping with the high E-Performance, they offer plenty of lateral support. With raised backrests, integrated headrests and an embroidered crest, their look is inspired by the sports seats in Porsche cars. Basic functions such as height adjustment and fore/aft adjustment have, of course, been retained.

Equipment

A luxurious, high-tech, sporty feel

The Frauscher x Porsche 850 Fantom Air has space for up to nine passengers. The swimming platform at the rear leads to a generous lounge area with two comfortable sunbathing pads. A central aisle connects the back end of the boat with the cockpit. Two more upholstered benches in the front end are equally inviting for relaxation. The seats are covered with durable artificial leather. Customers can individually configure their boat from a wide range of colours.

The eFantom is also equipped with two folding bimini tops that provide shade on sunny days. Also standard is a high-end audio system from JL with bluetooth and WiFi connectivity. It can be operated via the 12-inch multi-information display. An echo sounder and chart plotter are integrated into the display concept. The standard bow thruster simplifies mooring and casting off. The electric stainless steel anchor with stainless steel chain and chain counter on the bow is eminently practical, and not only in remote bays. The eFantom is also equipped with LED ambient lighting, which enables the selection of different colour modes. LED underwater lighting at the rear also comes as standard.

Just as no two Porsche models are the same, individuality is also very much in demand for boats. Frauscher strives to meet personal customer requests as far as possible. The upholstery can be ordered in various colours. The full tarpaulin and the underwater paint (optional extras) protect the boat at berth. The hull and deck can be painted in any colour. Among other options, the entire colour palette that Porsche offers for its road vehicles is available for this purpose.