

# Taurus Electro



## TAURUS ELECTRO IS FOR YOU BECAUSE YOU ARE LOOKING FOR

Electric powered 2-seat side-by-side versatile self-launching glider with twin landing gear for totally independent gliding.

The most spacious and comfortable cockpit with incredible view.

Superb gliding characteristics and harmonised controls with 15 m wingspan.

## DESCRIPTION

Taurus Electro was the 2007 first electric 2-seat aeroplane in serial production available on the market

Based on the Taurus M, the Taurus Electro G2.5 replaces the gasoline powered engine with the high-performance electric powertrain, where battery capacity is not a limiting factor in performance/endurance. Taurus Electro G2.5 represents a leap forward in performance, safety, functionality and user friendliness. Since 2018 Taurus Electro 2.5 also offers fast charging and is compatible with Pipistrel's 5kWh range of electrical charges.

Taurus Electro G2.5 offers complete freedom and independence thanks to the retractable electric engine, double retractable main landing gear, excellent gliding performance, inexpensive maintenance and a well-ventilated spacious cockpit.

### • Can electric perform better than conventional? Absolutely!

Taurus Electro G2.5 can use a shorter runway, climb faster and it performs much better than the gasoline-powered version when it comes to high altitude operations. All this is possible thanks to the specially-developed emission-free Pipistrel's 40 kW electric power-train. The tailor-developed heated and ventilated Lithium-technology batteries come in two configurations, capable of launching the airplane 2500 m (8500 ft). They are placed in self-contained boxes, monitored constantly by the Pipistrel's own battery management system (BMS), complete with data-logging and battery health forecasting. The propulsion motor weighs an impressive 11 kg and generates 40 kW power.

### • More than just a touch of Innovation

With the Taurus Electro G2.5 we are introducing a World's first – a full set of on-board networked avionics providing for a fly-by-wire powertrain management with built-in multi-layer protection logic.

The first element of this networked system is the state-of-the-art hybrid battery management system which was developed entirely in house to be able to function with tighter tolerances than commercial available systems, yielding better performance and longer battery life. The Battery Management system monitors the specially developed batteries. They represent the absolute pinnacle of today's battery technology, combining low weight, high power and high energy density. The batteries are placed in boxes with dedicated power and signal connectors. Each battery cell's performance is monitored, temperature controlled with heating and ventilating, and future performance predicted. The system is able to forecast when a battery cell is mal-performing and signals the need for a premature replacement. All parameters are also logged in the on-board flight data recorder. The two [2] battery boxes are removable and replaceable. The second element is the power inverter/motor controller. It features self-protection logic against current spikes, over temperatures and other potential abnormal situations. In other words, the controller is not only driving the motor, but also providing for the low-level protection of both itself, the batteries and the motor.

### • Introducing the EPISI 430 cockpit interface instrument!

The most noticeable addition to the networked system is the color-display cockpit interface instrument. The screen is really bright, in fact brighter than most displays out there, and is readable in the strongest of sunshine! It indicates the drive mode and important parameters to the pilot and provides the interface for engine retraction and extension. Everything is operated via two [2] toggle switches and a rotatable knob. The first toggle switch is the power on/off switch and does exactly that – powers up the motor controller.

The second toggle switch is the motor position selector «up/down» i.e. extended or retracted. This process is fully automated – the propeller is positioned and held in place while the motor extends or retracts. The pilot only selects the desired mode with the toggle switch. The rotary encoder acts as the throttle selector. Due to the nature of electric propulsion system, we decided to employ the computational power of this cockpit interface instrument and gave it the role of the master on board computer. This means it not only displays data to the pilot, but also «talks» to every other powertrain component on board via CAN bus and makes everything sing together. It is able to detect overheating of individual components and reduce power gradually in order to maximize the climb potential with the given system status. Not only that, it provides systems diagnostics and all necessary warnings to the pilot. The display's USB port is also used for software-updates of the Taurus Electro G2.5 systems.

### FLY FOR FREE – THE SOLAR TRAILER

#### • Do you wish to fly for absolutely free? It is possible!

Pipistrel is presenting another World's first – the concept of Flying For Free, the Solar Trailer[R], which can charge-up the Taurus Electro G2.5 absolutely free and with zero emissions! Charging with the help of the Solar Trailer offers 15 kW of usable power to charge the Taurus Electro in the middle of nowhere without the need to connect it to the grid.

Furthermore, when the Taurus Electro is stored in the trailer during a week of bad weather, it will still be charged and ready to fly by the weekend. The Solar Trailer and Taurus Electro are perfect companions and demonstrate how it is possible to fly free of charge, quietly and with absolutely zero emissions, with today's technology! The trailer offers Multiple 12VDC and 240 VAC (24VDC and 110VAC available on request) electrical outlets, and 3.6 kWh integrated storage battery. Also present is the solar-system by-pass, so you can charge the aircraft inside the trailer when parked in the hangar/garage, for example. The integrated storage battery energy of the trailer can be transmitted directly into the Taurus Electro. The Solar Trailer gathers energy also when you are flying, so you charge the Taurus Electro G2 also during the night with the energy that has accumulated during the day!

## TECHNICAL CHARACTERISTICS

### TECHNICAL DATA

Taurus is made in reinforced composite materials (epoxy resin, glass, carbon, Kevlar)

model	TAURUS Electro
ENGINE	Electric 40Q30
max power(with 2 carb)	40 kW / 2 min/30 cont
PROPELLER – 2 blade	Pipistrel 1650 mm diam
SIZES	
wing span	14.97 m
length	7.30 m
height – propeller extended	2.7 m
wing area	12.33 m <sup>2</sup>
rudder area	0.9 m <sup>2</sup>
horizontal tail area	1.36 m <sup>2</sup>
aspect ratio	18,6
positive flaps	0,-5,+9,+18 deg
negative flaps	-5 deg (up)
center of gravity	refer POH
WEIGHTS	
empty weight	306 kg with 20 Ah batteries
minimum pilot weight (no front ballast)	90 kg
minimum pilot weight (with optional front ballast)	69 kg
max take off weight (MTOW)	460 / 472.5 / 550 kg
fuel tank capacity in the wing	N/A
useful fuel	N/A
Li-PO battery capacity	20 Ah / 4.75 kWh (std)
PERFORMANCES	
stall with flaps	63 km/h
stall without flaps	71 km/h
manoeuvring speed	163 km/h
max speed with flaps down	130 km/h
max speed with airbrakes out	225 km/h
VNE	225 km/h
min.sink	0.70 m/sec
min.sink speed	94 km/h
max. sink with airbrakes	5.5 m/sec
best glide	1:41
best glide ratio speed	115 km/h
best glide at 150 km/h	1:32
max aerotow speed	107 km/h
45°-45° roll time	3.5 sec
take off run MTOW	160 m
take off over 15 m MTOW	245 m
best climb speed	95 km/h
max climb rate (MTOW)	3.1 m/s
service ceiling MTOW	2.000 m AGL
max load factor permitted (xLB)	5.33 G, -2.65 G
design safety factors & tested	minimum 1.875
fuel consumption, at full power	N/A

Note: Pipistrel reserves the right to revise this data sheet whenever occasioned by product improvement, government/authority regulations or other good cause.