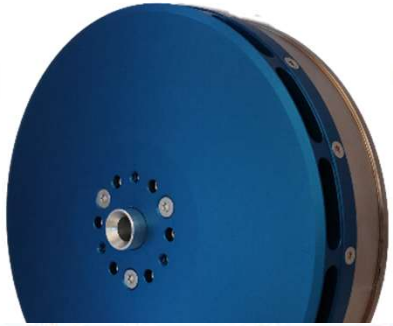
GEIGER ENGINEERING



HPD

High Power Direct

Compact · Powerful · Reliable

2020 | 2021
INNOVATIVE THROUGH RESEARCH
Awarded by the Stifterverband
GEI2149HIR

www.geigerengineering.de

What you should know about our *E-Drive* system

For aircraft builders the usage of electrical drive systems is often no easy matter. The relatively recent matter in conjunction with a lack of know-how and the requirement of a high efficiency need can't be solved satisfactorily and securely with compounded components. Therefore we invented a all-in system that firstly is installable by plug and play, certified and very efficient and secondly provides the opportunity to add further functional characteristics via parameterization, scaling and optional components.

The advantages

- Fly environmentally friendly
- Energy conversion efficiency > 90%
- Engine flying time with two standard batteries >2h
- Low noise and low vibration
- Continuously and precisely adjustable and positionable in all directions
- Self-sufficient – no infrastructure necessary
- No handling with fuel
- Clean and odourless
- Secure, reliable operation, high-availability concept
- Easy integrable into flight systems
- No maintenance
- Low energy and subsequent costs
- No disturbing engine noise when flying
- New, aerodynamic well designs possible

The complete system

- ✓ Complete system from propeller to charger incl. all cables and plugs from one provider, scalable.
- ✓ All components were invented in the house and are perfectly coordinated.
- ✓ Full service in advice and design
- ✓ Constant product care -> regular new features for system extension and improvement
- ✓ Special solutions for your individual range of application, support of special projects
- ✓ Safety extra-low voltage <60V DC, no risk of electric shocks
- ✓ Interpreted and examined, including extensive documentation
- ✓ With AI-Support
- ✓ Complete system from 7300.-€ net incl. high performance battery and propeller!

The *E-Drive* components

Direct Drive Motor
HPD 12/14/16/20/25
HPD 32/40/50 D; Duplex (redundancy drives)

HPD8	– 8kWc. 12kW peak @ 2,9 kg
HPD12	– 12kWc. 16kW peak @ 3,9 kg
HPD14	– 14kWc. 18kW peak @ 3,9 kg
HPD16	– 16kWc. 20kW peak @ 4,9kg
HPD20	– 20kWc. 30kW peak @ 5,3kg
HPD25	– 25kWc. 40kW peak @ 7,0kg
HPD32D	– 32kWc. 50kW peak @10,8 kg
HPD40D	– 40kWc. 60kW peak @11,8 kg
HPD50D	– 50kWc. 80kW peak @15,8 kg

Folding propellers, fixed propellers and adjustable propellers

Invented specially for the HPDxx series (diameter 1,30m to 1,80m) noise emission <49dB in 150m distance

Charging systems
DC converter

Charger 750/1500/3000/11000W for fast and efficient battery charge. For travel or stationary or for solarcells.
(charging time ca. 2h with 60Ah / 1500W)
DC converter 12V/60W/120W/240W

E-Drive System

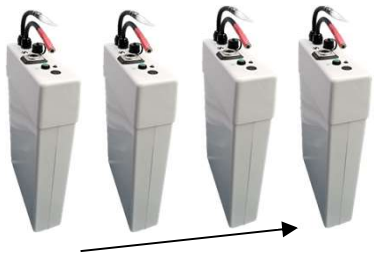
Motormanagementsystem
MC300

The MC300 is a high-performance, robust motor controller with integrated algorithms that are specially invented for usage in aircrafts.

Interfacesysteme
SDI / ADI / ADCI / Throttle / integrated blackbox

The different interface, control and recording systems ensure an optimal operation, control and evaluation.

Battery packs with integrated battery management system



Li-Ion battery of latest technology for flight times >2h; UN/DOT 38.3 examined!
3,1 kWh 15kg … 6,2 kWh, 30 kg …
… further scalable

Technische Änderungen vorbehalten, die Bilder sind nicht maßstabsgerecht 01.2024

Function and energy flow diagram of our
E-Drive Systems

These professionals using ***E-Drive*** for a long time

***Manfred Ruhmer**,*
Multiple world champion in Hang-gliding, using HPD12/16 for over twelve years

Manfred Ruhmer

Manfred, which aeronautical experiences have you made with our electrical HPD drive systems?

One thing is clear to me: For lightweight aircrafts, whether it is a swift, a lightweight trike or a double drive the only drive that is worth considering is the electric drive. My experiences with the HPD are only positive and I don't want smell of gasoline nor gasoline smeared or oily hands. No vibration and a very low noise generation, low fuel cost and the reliability of the system are other advantages.

Which prospect do you see for electrical drive systems, primarily as start-up and return flight support in aviation sports?

As soon as the cost of drive systems are affordable, start-up and return flight support systems will be very popular and replace combustion engines at some point. Also, the politics are challenged to support electrical drive systems in any form of manner.

Ales Hubacek
Is expert "motorized" pilot and instructor of the flying school Skyjam. As first flight instructor of Switzerland, he has a foot launching as well as a paraglider trike version admitted with the Geiger E-Drive HPD 12 system.

Ales Hubacek

Ales, which aeronautical experiences have you made with our electrical HPD drive systems?

As a swiss manufacturer of paramotors, several years ago I set the goal to build a reliable, robust, easy to handle and powerful paramotor. Already the very first tests with the Geiger drive system pointed out the big potential of this unit compared to other ones. With the first prototype of the paramotor I could realize flat country thermal flights lasting for hours. Since then I spent many hours in the air with this drive system. Some of these flights had thermal assistance but other ones have been rare Nullschieberflüge in calm air. The fascination from the beginning has always been the silence during this type of flying. There is no vibration noticeable compared to combustion engines. The drive is adjustable precisely and continuously and if necessary, the system generates a stunning boost that brings the pilot back to a safe height.

Which prospect do you see for electrical drive systems, primarily as start-up and return flight support in aviation sports?

The Geiger drive system offers a wide range of possibilities. It allows thermal entries in areas where no mountains or launching possibilities exist. With the drive reserve one can find appropriate and safe landing possibilities even on cross country flights. Flights are now possible without a long journey and it doesn't make any difference if you use a paraglider, hang-glider or trike. Moreover the relaxing evening flight is possible without much effort and without significant impact on population and environment by noise and exhaust gas.

Application examples of the *E-Drive* system

Swift Light with HPD 12

C42 with HPD50D

Elektra Trainer with HPD50D

EGO Trike with HPD12/16/20

Taurus with HPD40D

Skyjam GS with HPD12

Birdy with HPD14

ANT-Trike with HPD16/20/25

Ballonantrieb with HPD 12

Grille with 12 x HPD20

AERO 2 with 4 x HPD14SD

…
Your electro project could also be placed here!

For development, advice, design and sale we will be happy to help you.
You can find more examples and information on our homepage.

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