The controller is designed to be used with virtually All types of motors: from BLDC inrunner, outrunner, PMSM, DC-motors, AC motors.etc.

It has the latest and up to date functions communications and technologies incorporated that are continuously updated via software updates.

It can work in sensorless mode, encoder mode, resolver, HFI, hall sensors, etc.

It is developed with ruggedness in mind, able to adapt to any user requirements.

All our controllers, are tested up to full power under laboratory conditions.
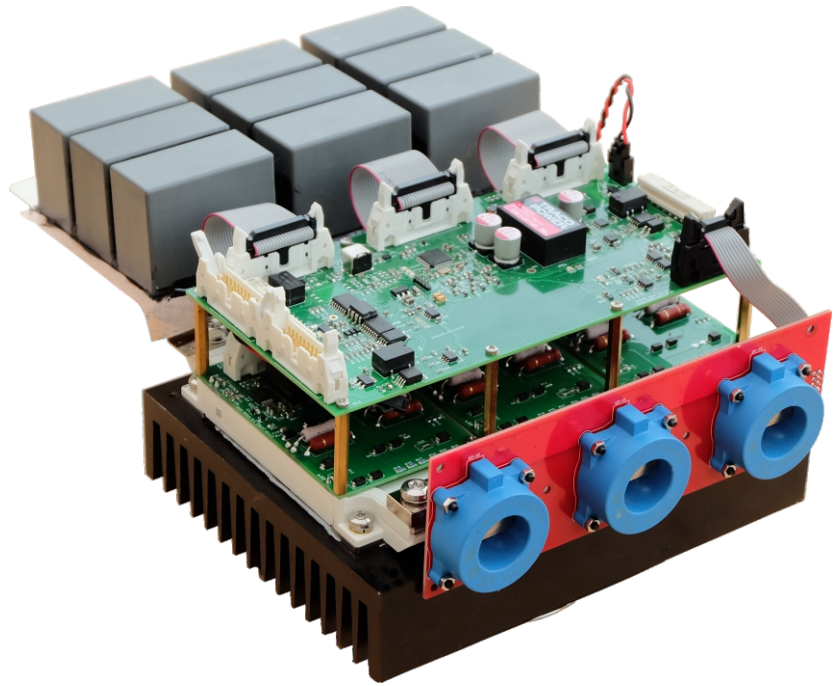
Applications:

- Unmanned drones
- Ultralight aircrafts
- Motorcycles
- Robots
- Industrial
- Boats (water-cooled version)

Main FEATURES

BATTERY VOLTAGE 48v-650v

MOTOR MAX 400A

SENSORED OR SENSORLESS

AIR AND WATER COOLING VERSION AVAILABLE

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Continuous power:	120kW*
Max power	150kW*
Main High Voltage range	48-430Vdc
Digital power to logic	24v
Peak motor Current:	520A
Phase output max current:	380Arms
Battery current	350A
Max Efficiency	>98%
Telemetry	SD card data recording, Wi-Fi, Bluetooth communications, Android, iPhone App
IMU	IMU inertial measurements implemented via Gyroscope and Accelerometer onboard
Rotor position	Absolute encoder, resolver, ABI, Hall sensors.
Fault detection	Double independent hardware over-current, overvoltage, overtemperature, current imbalance.
Data logging	Realtime Data logging and Monitoring.
Vesc open source software	Fully programmable via the VESC platform apps / software
Size	280x200x145mm, 3D cad step available on request
Weight	~ 4,5kg

* With stock cooling it can sustain 120kW continuous (ambient temp and airflow dependent), for higher power larger radiator is needed.
Main features:
Field Oriented Control (FOC) with very smooth acceleration and braking regeneration
Very low ESR, high-quality solid-state DC-Bus capacitors used for long continuous operation >100.000 hours. Electrolytic capacitors are prone to more heat and dry out overtime.
Capacitor Self discharge function implemented as soon as the digital power is removed. Contactor circuit module for precharge implemented.

Communication:

· Isolated CAN bus, serial, SPI, USB for programming, open source software based on VESC
· Interface to control the motor: PPM signal (RC servo), analog (0-3.3v), UART, I2C, USB.
· Over-the-air (OTA) software and firmware updates
· Wi-Fi, Bluetooth interface

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Safety:

· double independent hardware over-current protection. Monitors all phase currents, DC bus voltage, 3 base IGBT temperature monitors. Short circuit protection with gate driver level DESAT protection implemented.

· Programable throttle dead band, middle band, max band.

· Self discharge circuit for HV capacitors as soon as all the power is cut.

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