JOULE MOTORS
CUSTOM MOTORS AND DRIVES
i.berca@joulemotors.eu

MOTOR CONTROLLER
JLM-700V600A

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
- Electric Vehicles
- Robots
- Industrial
- Boats (water-cooled version)

Main FEATURES

BATTERY VOLTAGE 100v-700v

MOTOR MAX CURRENT 600A

SENSORED OR SENSORLESS

LIQUID COOLING

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Continuous power:	240kW
Cooling	Liquid, 6L/min @ 40C
Environment protection	IP65
Main High Voltage range	100V-700Vdc
Digital power to logic	24v
Peak motor Current:	600A
Phase output max current:	400Arms
Battery current	400A
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 with vesc express dongle
Vesc open source software	Fully programmable via the VESC platform apps / software
Size	450x240x106mm, 3D cad step available on request
Weight	~ 9,6kg

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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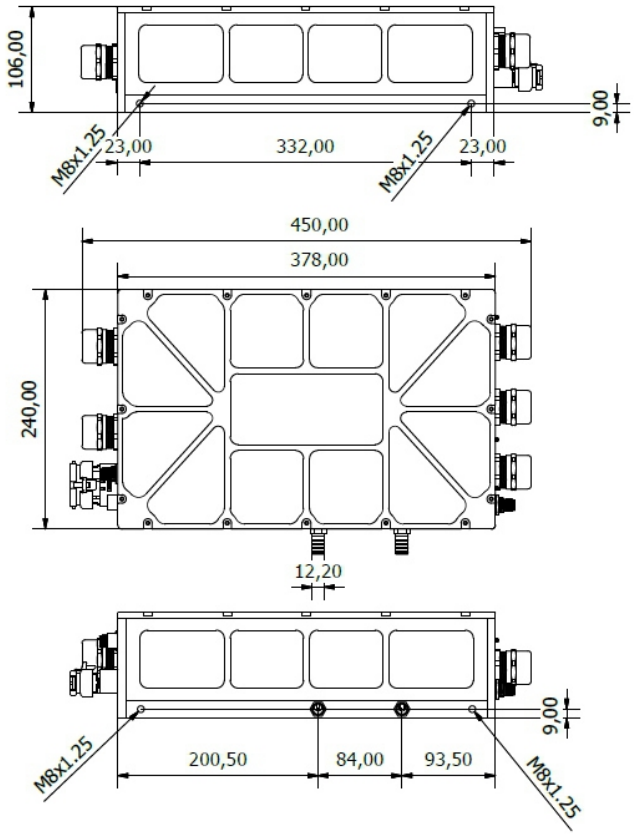
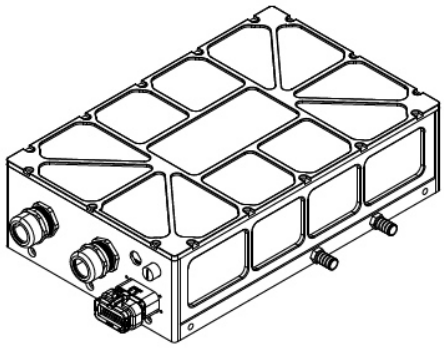
Safety:

· 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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