Velocity H Series ESC

CE1101B / CE1888 / CE1767
Datasheet

Velocity HS
CE1767

Velocity HT
CE1101B

Velocity HC
CE1888

Performance:

Model	Velocity HS	Velocity HT	Velocity HC
Voltage	60V / 14S	75V / 18S	60V / 14S
Current* (Sustained/Peak)	150A / 300A	150A / 300A	250A / 500A
Power	7.5kW	10kW	15kW
Max e-RPM	250,000 Electrical RPM	250,000 Electrical RPM	250,000 Electrical RPM
Drive Frequency	5-75kHz	5-75kHz	5-75kHz
Timing Advance	0 – 25°	0 – 25°	0 – 25°
Operating Temperature	-20°C – 100°C	-20°C – 100°C	-20°C – 100°C
IP Rating	IP65	IP65	IP65
Length	110mm (4.33" inch)	110mm (4.33" inch)	110mm (4.33" inch)
Width	60mm (2.36" inch)	60mm (2.36" inch)	60mm (2.36" inch)
Height	21mm (0.83" inch)	29mm (1.14" inch)	32mm (1.26" inch)
Weight	250g (8.82oz)	300g (10.58oz)	350g (12.35oz)

** Sustained current rating depends on cooling provided through suitable airframe integration*

Key Features:

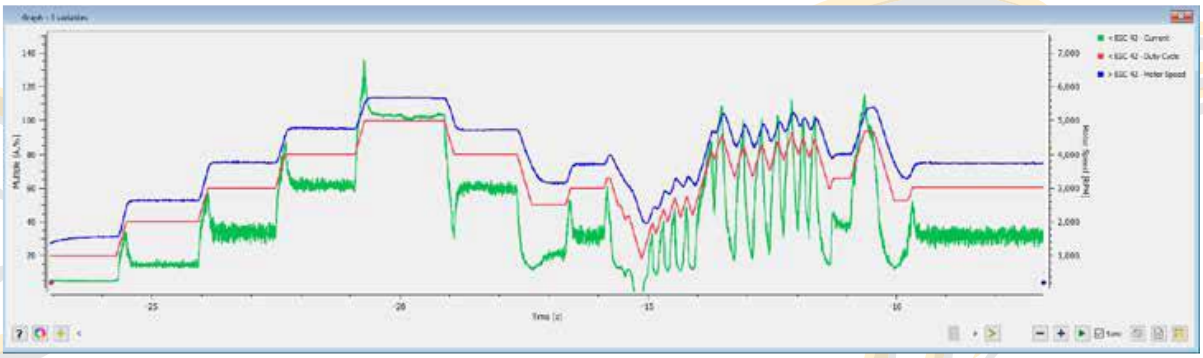
- Supports heavy lift application with high power density and sustained power output
- Galvanically isolated CAN interface provides rich telemetry data to avionics
- Telemetry interface reports RPM, current, voltage, temperature and ESC system status
- Extremely low impedance MOSFET switches with impedance matched drive circuitry to reduce cooling requirements and increase reliability and endurance
- Low impedance ceramic capacitors array provides extremely high ripple current capacity
- Specifically designed for high temperature, high vibration environments
- Lightweight anodized enclosure is machined from aerospace aluminum
- Repeatable sensorless starting for reliable VTOL transition
- Hall sensor support for high torque applications
- Configurable drive frequency of up to 75kHz
- Automatic safety features ensure that the ESC remains within safe operating range
- User configurable foldback limits (current, voltage, ripple and temperature) and tracking of certain parameters (max battery current)
- Hardware Interlock, forcing a motor shutdown for operator safety which is reported over the CAN
- The onboard data recorder will store motor operational data in addition to the autopilot
- Utilises powerful 32-bit micro-controller running an advanced real-time operating system

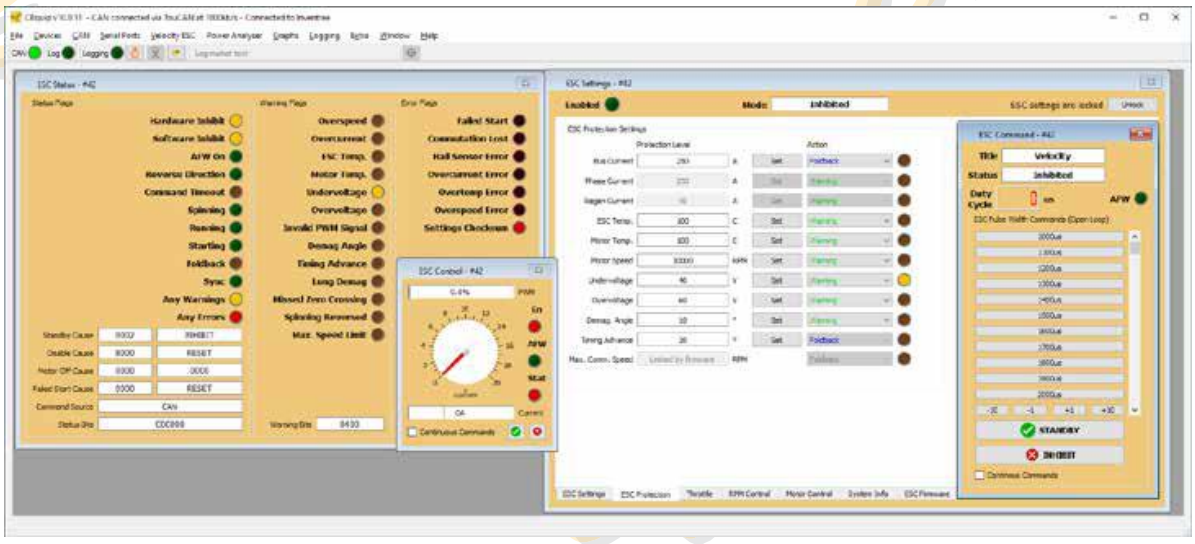
Autopilots / Configuration:

- Natively integrated with multiple autopilots, including Ardupilot, Piccolo and Veronte.
- Multi-protocol CAN support; DroneCAN (previously UAVCAN 0.9) and PiccoloCAN
- Comprehensive ICD and SDK documentation available on request for custom integration
- CEquip PC software is provided with every ESC purchase giving customers access to real-time graphing of ESC parameters and access to configurable specifications for motor and propeller set up
- Integrated bootloader for firmware updates over CAN without requiring removal from the vehicle

Customer Support:

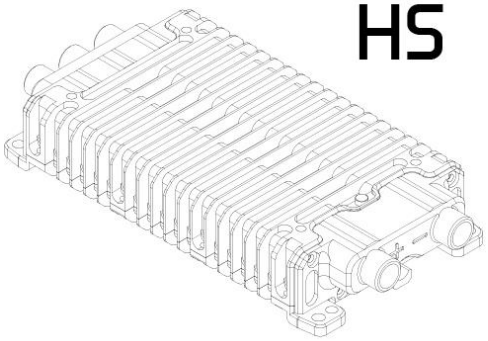
- Assistance with integration and configuration of ESCs with support from senior technicians and engineers
- Each ESC can have custom harnesses wired for particular vehicle requirements
- Currawong can work to develop custom motor controls for specific design requirements

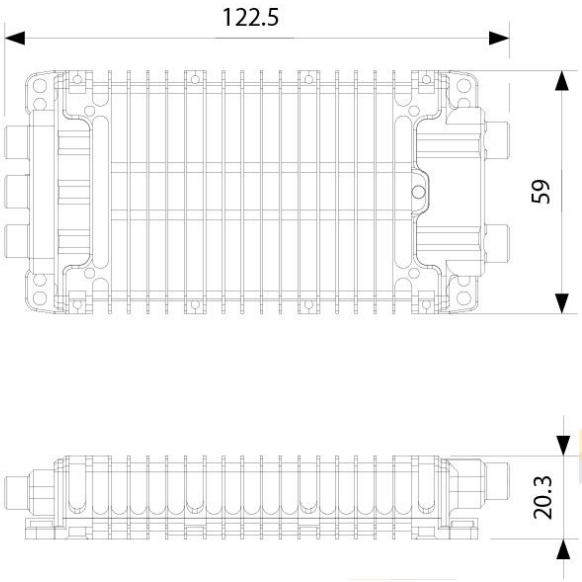




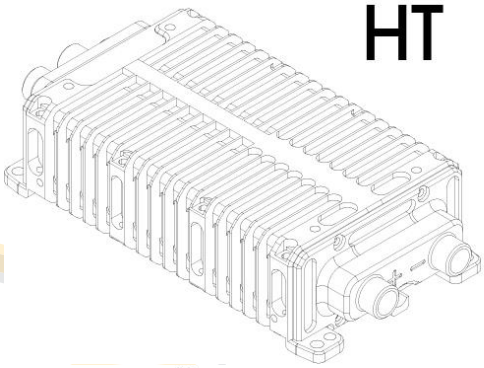
Technical Drawings:

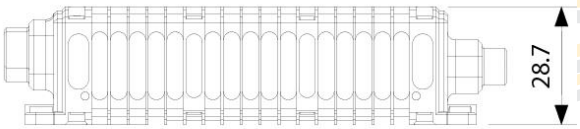
HS



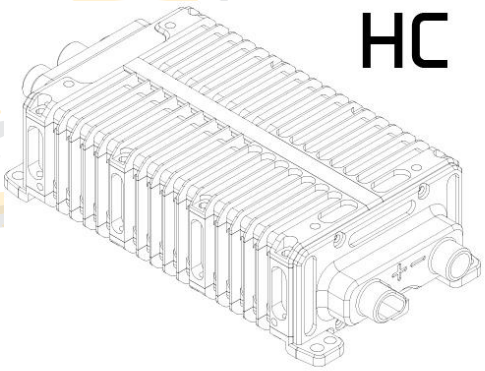


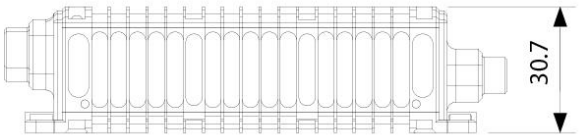
HT



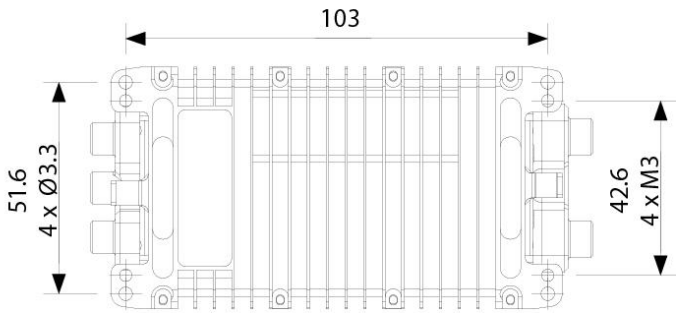


HC





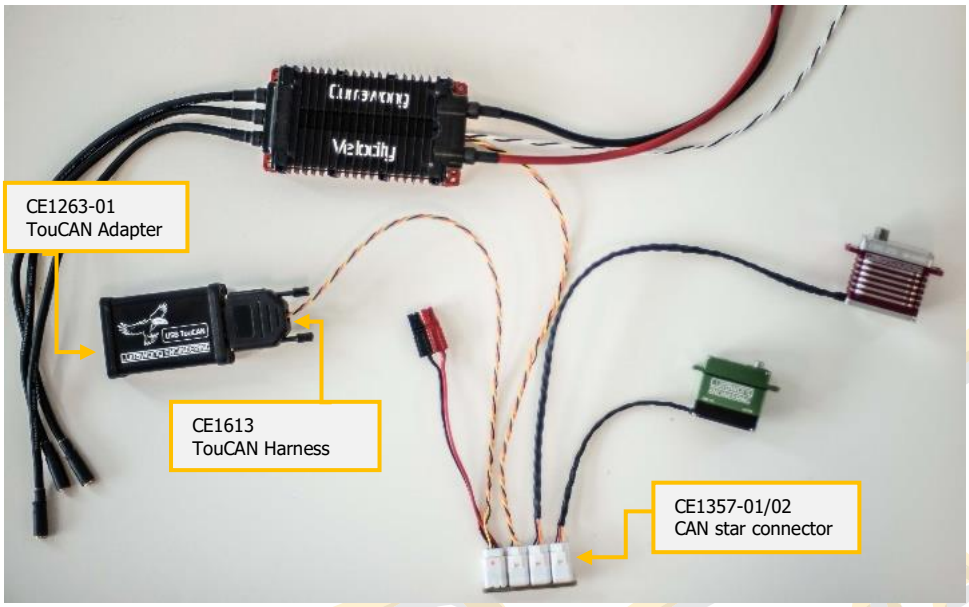
All models have the same footprint.



Mounting Holes

USB to CAN converter kit

In order to perform engineering tests, configure the engine components and update firmware, the following TouCAN USB to CAN converter kit is recommended to new customers comprising:



The TouCAN is a fully electrically isolated USB to CAN adapter for the integration and testing of in-situ CAN devices. The TouCAN provides advanced protection against ground shift and electrical noise, ensuring the safety of the host PC. It also provides optional bus termination for user convenience. Currawong offers a matching harness for the TouCAN.

The CAN Star connector is a simple breakout board providing connection for multiple CAN devices to the bus. It provides power and CAN connections for each device.

The TouCAN is for ground use only.