# Velocity ESC Range

CE2092 / CE1101B / CE1888 / CE1767

Datasheet




| Model | Velocity XS | Velocity HS | Velocity HT | Velocity HC |
|---|---|---|---|---|
| Part | CE2092 | CE1767 | CE1101B | CE1888 |
| Voltage | 60V/14S | 60V / 14S | 75V / 18S | 60V / 14S |
| Current* (Sustained/Peak) | 75A / 150A | 150A / 300A | 150A / 300A | 250A / 500A |
| Power | 4.5kW | 7.5kW | 10kW | 15kW |
| Max e-RPM | 250,000 Electrical RPM | 250,000 Electrical RPM | 250,000 Electrical RPM | 250,000 Electrical RPM |
| Drive Frequency | 8 – 48kHz | 8-48kHz | 8-48kHz | 8-48kHz |
| Timing Advance | 0 - 30° | 0 – 30° | 0 – 30° | 0 – 30° |
| Operating Temperature | -20°C – 100°C (-4°F - 212°F) | -20°C – 100°C (-4°F - 212°F) | -20°C – 100°C (-4°F - 212°F) | -20°C – 100°C (-4°F - 212°F) |
| IP Rating | IP54 | IP65 | IP65 | IP65 |
| Length | 97.8mm (3.15 inch) | 110mm (4.33 inch) | 110mm (4.33 inch) | 110mm (4.33 inch) |
| Width | 39.6mm (1.77 inch) | 60mm (2.36 inch) | 60mm (2.36 inch) | 60mm (2.36 inch) |
| Height | 16.3mm (0.53 inch) | 21mm (0.83 inch) | 29mm (1.14 inch) | 32mm (1.26 inch) |
| Weight | 75g (2.65oz) | 250g (8.82oz) | 300g (10.58oz) | 350g (12.35oz) |

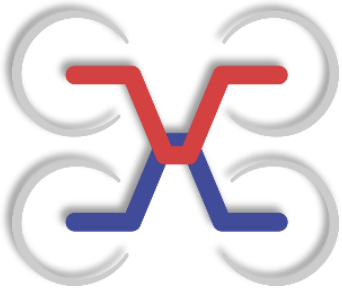
*Continuous current rating will depend on ESC installation. ESC and motor temperature must be kept below maximum rated value.

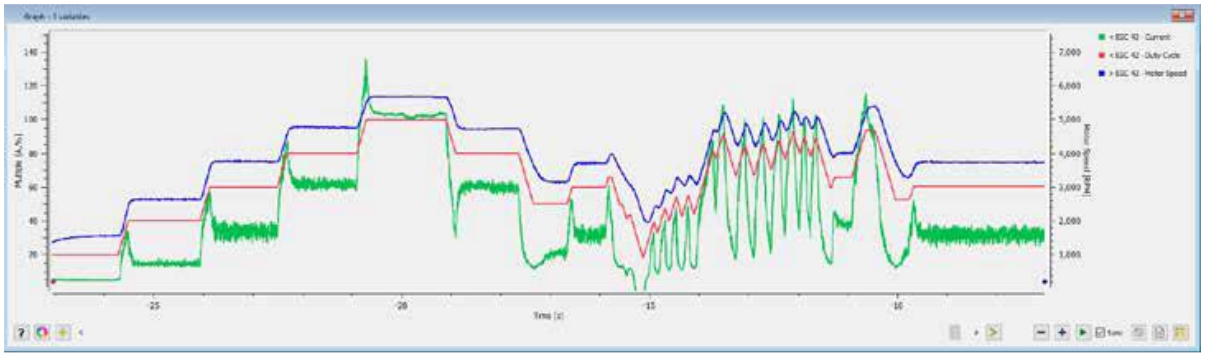
### *Key Features:*

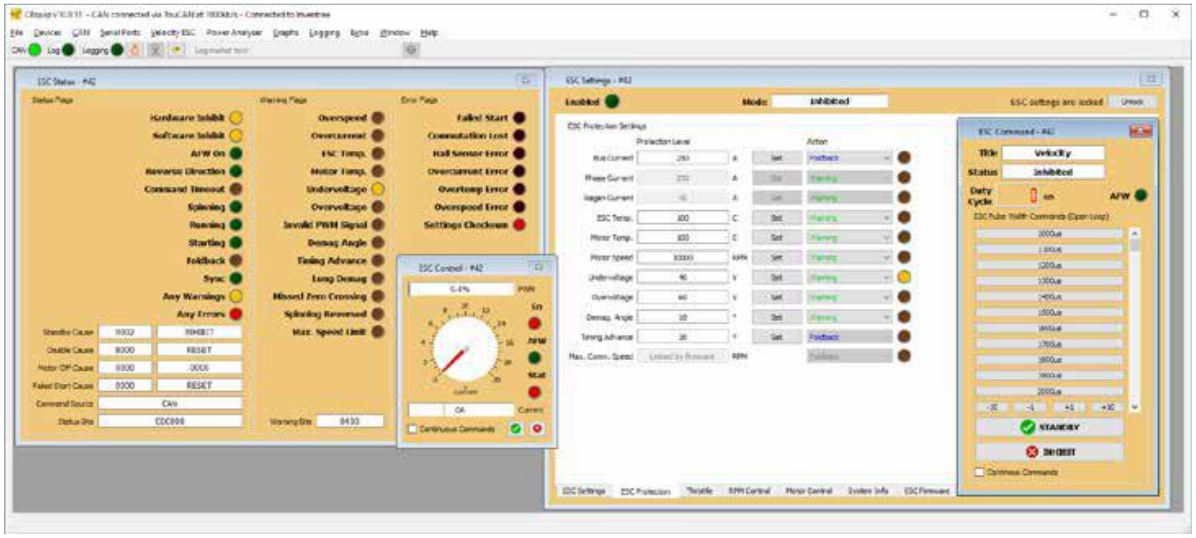
- Supports heavy lift application with high power density and sustained power output.
- Galvanically isolated CAN interface provides rich telemetry data to avionics.
- Telemetry interface reports RPM, current, voltage, temperature and ESC system status.
- Extremely low impedance MOSFET switches with 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.
- Utilizes 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.





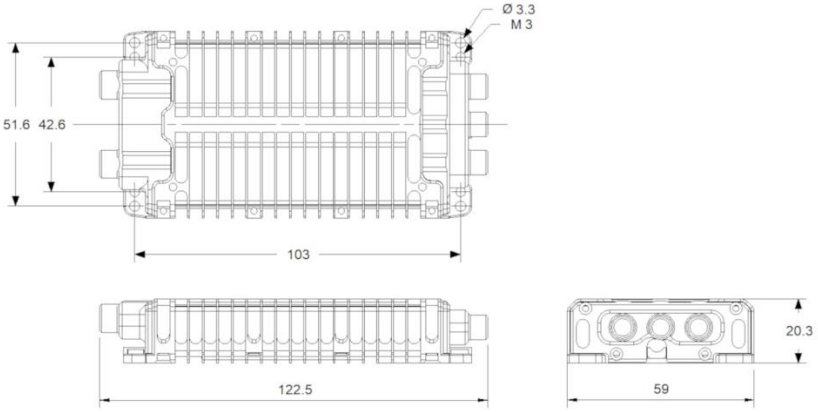


***Customer Support:***

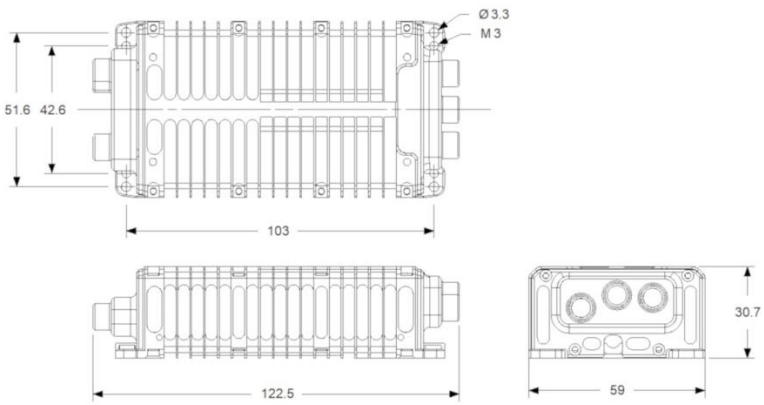
- Assistance with integration and configuration of ESCs with support from senior technicians and engineers.
- Each ESC can have custom harnesses wired for particular vehicle requirements.
- Currawong can work to develop custom motor controls for specific design requirements.

***Technical Drawings:***

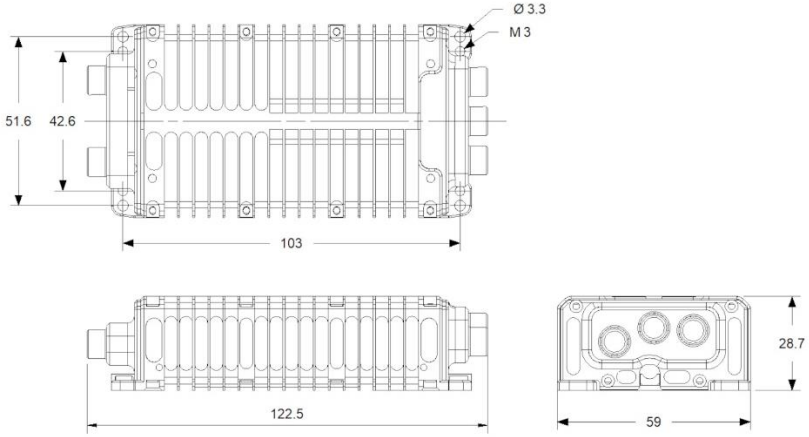
***HS***



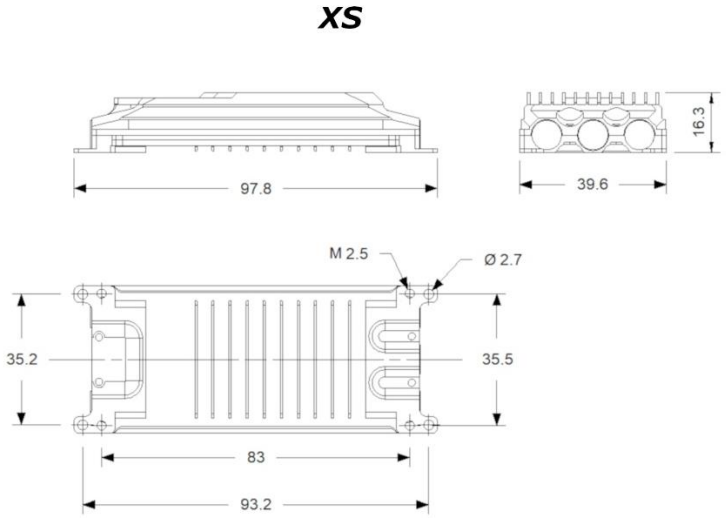

***HC***




***HT***

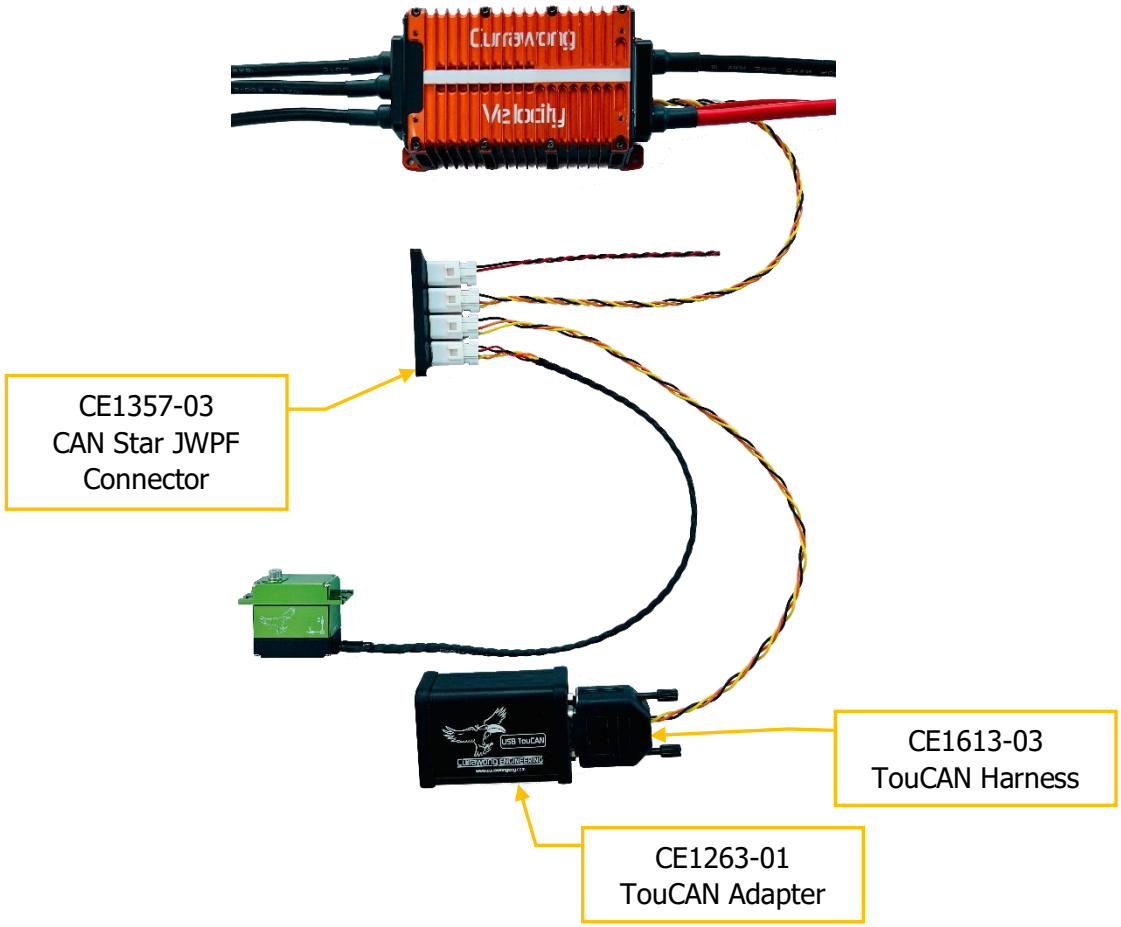



***XS***



### *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.