

Taurus AEX BLDC Motor Controller



Powerful, Efficient and Flexible!

The Taurus AEX is a high efficiency BLDC motor controller that speaks in more than just pulses! This controller implements full FOC/SVPWM for highly efficient operation up to **4kW peak power** and provides isolated CAN 2.0 and RS-485 communications, giving you more feedback and control of your propulsion system. The AEX supports Hall or Quadrature sensor inputs for more accurate positioning. Taurus AEX can be used as a motor controller but can also be used for linear actuation and controlling servos.



Available with DroneCAN Support!

(b) Efficient High Power

The Taurus implements full four quadrant Field Oriented Control (FOC) through Space Vector Pulse Width Modulation (SVPWM) to achieve exceptional motor controller efficiency in the nominal operating range. The controller also supports overmodulation to maximize peak power output of the motor drive. The AEX has the following performance capabilities:

- Up to 24S (100.8V) operation
- +/-63A Peak Operation
 with adequate heatsinking

Flexible Design

The Taurus supports various hardware interfaces for communication as well as commutation and alignment support. These interfaces can be used for simple comms, or configurations with pitch control servos, etc. The entire software stack for the Taurus is built on the available source licensed allocore SDK, allowing fully tailored applications for customer control, comms, and other needs.

- Isolated CAN 2.0 Comms
- Isolated RS-485 Comms
- Hall/QEP Sensor interfaces
- General Purpose Input/Output for index, homing, and other sensors

The Taurus hardware IP has been tailored to various custom packages, including winglets, booms, etc.
Additionally, implementations for lower voltage/power have also been realized. Contact allocortech to get more information on customization.

Advanced Control

Four quadrant control around a 40KHz current control loop allows custom fast closed-loop control on speed, torque, voltage, power, or other more advanced modes.

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≅ Specifications

Input Voltage
20 - 67.2V (16S)
20 - 84V (20S)
20 - 100.8V (24S)

Current Rating (DC) 47A Peak/52A Continuous (16S) 63A Peak/58A Continuous (20S)

63A Peak/58A Continuous (24S)

Weight

184 g - w/finned enclosure

149 g - w/flat plate enclosure

79 g - without enclosure

Connectors

Power+Comms Positronic CBD17W2F37S6000 Sensors+Phase Output Positronic CBD13W3F37S600X

Recommended Max RPM

12 Pole Pairs
10,000RPM
10 Pole Pairs
12,000RPM
17,000RPM

CAN 2.0 Interface

Max Bitrate
Isolation Voltage

1Mbps
±400V

RS-485 Interface

Max Bitrate

Isolation Voltage

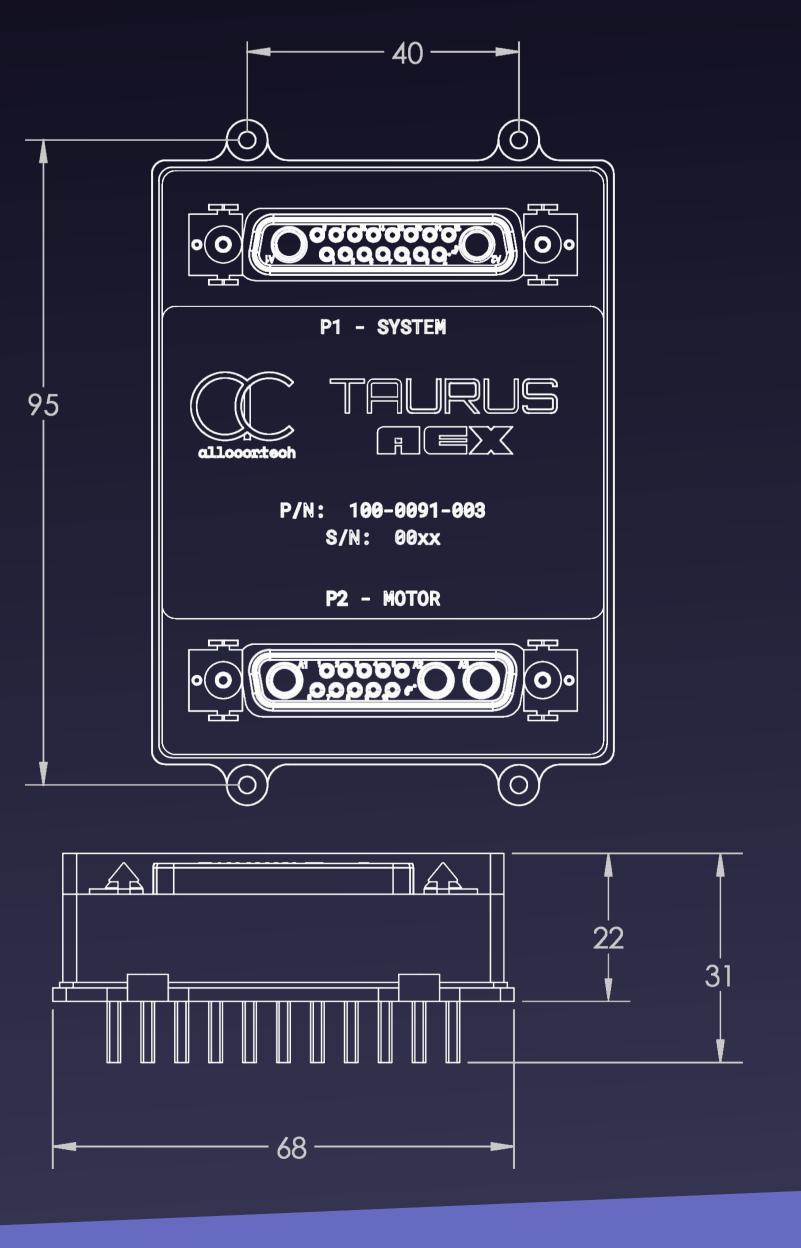
3Mbps

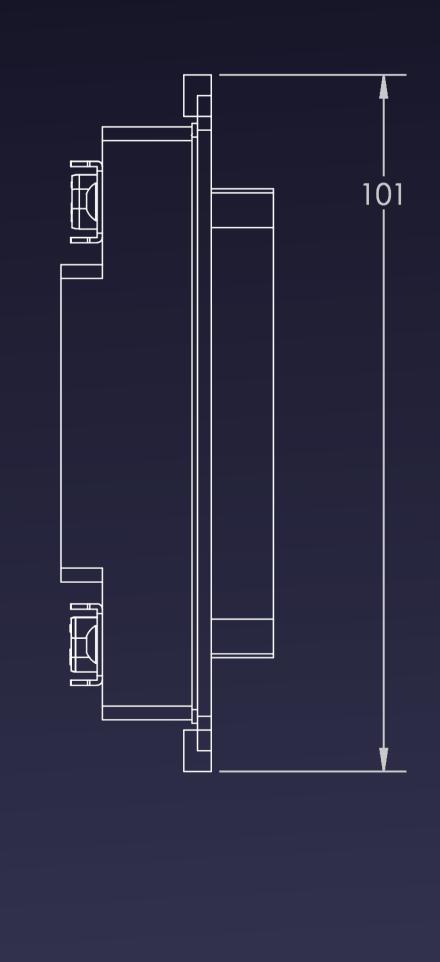
±400V

RS-232 Interface

Max Bitrate Isolation Voltage

Update Rate





1Mbps

±400V

Up to 500 Hz

: Make Your Motors Smarter

Fixed mapping sensorless open-loop PWM throttle based ESCs are a thing of the past. Taurus motor controllers enable customized control loops and tuning, along with bidirectional communications to give your system more advanced control and monitoring. Taurus adds in sensored motor capabilities for slow-speed and alignment/parking support.

--- Taurus Based Hybrid Generators

Four quadrant control means Taurus controllers support full regen capabilities. Not only does the Taurus AEX enable active regenerative braking, it can also be mated with a generator system to provide the basis of a hybrid electric powertrain.

Customized Packaging Solutions

Allocortech offers customized packaging solutions for its various Taurus BLDC Motor Controllers to fit your integration and heat sinking needs.