Description

The CBS-15 Gen 2 CAN servo (CE985B) is a fully digital servo motion control solution, with advanced control algorithms delivering a high level of performance and reliability.

The CBS-15 servo provides a complete closed-loop actuator system for use in unmanned aerial vehicles. It features a high-frequency current-limiting feedback system, with advanced motion control profiling, which is fully user-configurable.

Servo control is provided over a high-speed CAN connection, fully compatible with the Piccolo series of autopilots and tightly integrated with the Currawong range of products. With a fully documented command set, it is ready to be integrated into other platforms with a simple protocol specification.

In addition to high-speed control of servo position, the CAN connection provides real-time feedback of servo position, current, temperature and other data at user-configurable rates.

Each servo also features accelerometer-based vibration sensing, which provides a vibration analysis system distributed around the aircraft, with this data available via CAN. Accelerometer data can be sampled at up to 1 kHz for high-resolution vibration data.

A variety of user-configurable warning thresholds (such as current, vibration and position error) provide vital real-time diagnostic information for configuring and monitoring the health of the aircraft.

Benefits

- High-speed control over CAN
- Individually addressable servos with multicast and broadcast addressing supported
- Real-time feedback of multiple parameters
- Internal current measurement and limiting
- Low peak current
- Smooth operation due to high frequency control
- User-configurable input/output mapping for custom linearisation of control surfaces
- User-configurable motion control parameters: bandwidth, velocity limit, acceleration limit (soft start and soft stop)
- Accelerometer data with real-time vibration analysis
- High quality construction with all-metal body and gearing
- Seamless integration with Piccolo autopilot
- Fully documented ICD for integration with third party systems
- PC control software for servo control and configuration
- Full suite of graphing / logging / data analysis tools
- Fault monitoring and analysis
- Servo keeps track of run-time information

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Performance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Range</td>
<td>6 – 12 V</td>
</tr>
<tr>
<td>Peak Torque</td>
<td>750 mN</td>
</tr>
<tr>
<td>Peak Current</td>
<td>1.5 A</td>
</tr>
<tr>
<td>Peak Speed</td>
<td>600 deg/sec (@ 12V)</td>
</tr>
<tr>
<td>Angular Range</td>
<td>± 90 degrees</td>
</tr>
<tr>
<td>Temperature</td>
<td>-20 to +85 ° Celsius</td>
</tr>
<tr>
<td>Control Frequency</td>
<td>1000 Hz</td>
</tr>
<tr>
<td>Length</td>
<td>35 mm (1.38”)</td>
</tr>
<tr>
<td>Width</td>
<td>34 mm (1.34”)</td>
</tr>
<tr>
<td>Height</td>
<td>15 mm (0.59”)</td>
</tr>
<tr>
<td>Weight</td>
<td>45 g (1.6 oz)</td>
</tr>
</tbody>
</table>
Performance Data

The following data are indicative of servo performance under nominal operating conditions.

![Graph 1: Speed and current vs torque, 6V supply voltage](image1)

![Graph 2: Speed and current vs torque, 12V supply voltage](image2)

![Graph 3: Maximum continuous current vs ambient temperature](image3)