SPS Series Precision Positioners

Features

- Precision Positioning for 60-lb payloads
- Yoke, T-bar or 3-axis configurations
- Easily set-up and optimized for varying payloads
- Brushless, direct-drive motors provide high torque and dynamic response
- Zero backlash, highly reliable direct-drive eliminates gearboxes
- Lightweight – 35 lbs. (positioner only)
- Angular resolution of 21 bits (3 µradians)
- High-speed microprocessor control
- C-based firmware: fast, easy, flexible
- Controlled by analog joystick, or digitally by PC
- Suitable for military land, sea and airborne environments

Cobham’s standardized, commercial off-the-shelf (COTS) SPS Series of Precision Positioners are based on a scalable design resulting from over 25 years of satisfying demanding customer requirements. Precise positioning, high reliability, high payload to weight ratios, low maintenance and cost effective solutions are hallmarks of Cobham’s SPS Series of Precision Positioners. As our customer, you will benefit from Cobham’s proven experience in electronic imaging, signal processing, control systems and system integration.

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**SPS-500 Performance Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>21 bits (3 µradians)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.0057° (± 100 µradians)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.0014° (± 25 µradians)</td>
</tr>
<tr>
<td>Velocity</td>
<td>0.01° to 90° /sec (nominal)</td>
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<tr>
<td>Acceleration</td>
<td>90 °/sec² (nominal)</td>
</tr>
<tr>
<td>Travel:</td>
<td></td>
</tr>
<tr>
<td>Azimuth</td>
<td>± 270° standard</td>
</tr>
<tr>
<td>Elevation</td>
<td>-15° to + 95° standard</td>
</tr>
<tr>
<td>Resonant Frequency</td>
<td>Azimuth &gt;30Hz</td>
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<tr>
<td>(payload dependent)</td>
<td>Elevation &gt;40Hz</td>
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<tr>
<td>Base Motion Stabilization with high performance-FOG</td>
<td>&lt;100 µradians RMS</td>
</tr>
<tr>
<td>Motor Torque, Peak (nominal)</td>
<td>20 ft-lb AZ</td>
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<tr>
<td></td>
<td>10 ft-lb EL</td>
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</tbody>
</table>

**Coatings and Fittings**

The pedestal is pre-treated with chemical conversion coating and finished by powder-coating. Alternately, it can be painted according to customer specifications. It is supplied with stow locks for safe transportation, mechanical end-stops and a payload-specific electrical interface.

**Configuration**

- **Pedestal Type**: Direct-drive, Elevation over Azimuth Post/T-Bar, Yoke or 3-Axis
- **Drive Motors**: Brushless DC
- **Weight, Positioner**: 35 lb. Yoke (nominal)
- **Weight, Payload**: Up to 60 lb.

**Mechanical**

- **Mounting**: 6” dia. bolt circle, with 6 equally spaced 0.28” dia. holes

**Environmental**

- **Temperature**: -30° to + 55° C
- **Rain**: Weather-tight seals
- **Relative humidity**: 98%
- **Shock & Vibration**: MIL Standard Levels

**Options**

- **Sensors**: Joystick, Payload/system integration
- **Slip rings**: Risers, Tripod
- **Leveling**: LOS Stabilization, Rotary joints
- **Turnkey systems**: Video tracker, GPS/INU’s

**Power**

The Positioner derives its power from the servo control unit. The servo control unit operates from:

- 115/240 VAC, single-phase, 50/60 Hz power;
- 208 VAC (optional), three-phase, 50/60 Hz power;
- 24/28 VDC (optional).

* Specifications subject to change without notice