SPS Series Precision Positioners

Features

- Cost-effective solution for precise positioning of payloads weighing 800 lb. or more
- T-bar, yoke or 3-axis configurations
- Easily set-up and optimized for varying payloads
- Brushless, direct-drive motors reduce maintenance and EMI.
- Direct-drive, permanent magnet motors provide zero backlash by eliminating gearboxes while providing high reliability and high performance
- High payload to weight ratio.
- Angular resolution of 24 bits (0.4 µradians with Inductosyns)
- High-speed microprocessor control
- C-based firmware for fast response, ease of use, and flexibility
- Controlled by analog joystick or digitally via PC
- Suitable for 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-4000 Precision Positioner

#### High-Performance Positioning System

**SPS-4000 Performance Specifications***

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>24 bits (0.4 µradians with Inductosyns)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.0007° (±12 µradians)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.0003° (±6 µradians)</td>
</tr>
<tr>
<td>Velocity</td>
<td>0.01° to 90° /sec (nominal)</td>
</tr>
<tr>
<td>Acceleration</td>
<td>90° /sec² (nominal)</td>
</tr>
<tr>
<td>Travel</td>
<td>± 176° standard</td>
</tr>
<tr>
<td>Azimuth</td>
<td>± 180° optional</td>
</tr>
<tr>
<td>Elevation</td>
<td>-15° to + 95° standard</td>
</tr>
<tr>
<td>Resonant Frequency</td>
<td>Azimuth &gt;30 Hz</td>
</tr>
<tr>
<td>(payload dependent)</td>
<td>Elevation &gt;40 Hz</td>
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<tr>
<td>Base Motion Stabilization with</td>
<td>&lt;25 µradians RMS</td>
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<tr>
<td>high performance-FOG</td>
<td>(depends on PSD)</td>
</tr>
<tr>
<td>Motor Torque, Peak (nominal)</td>
<td>250 ft-lb AZ</td>
</tr>
<tr>
<td></td>
<td>100 ft-lb EL</td>
</tr>
</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. The SPS-4000 is supplied with stow locks for safe transportation, a pedestal-safe switch allowing personnel to immobilize the pedestal during maintenance, 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**: 400 lb. (nominal)
- **Payload**: Up to 800 lb.

#### Mechanical

- **Mounting**: 20.375 inch dia. bolt circle, with 6 equally spaced 0.406 inch dia. holes
- **LOS**: 27 inches above the pedestal base (Nominal) for Post and T-Bar configurations, 38.00 inches for Yoke configuration

#### Environmental

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

#### Options

- **Sensors**: Joystick
- **Slip rings**: Risers
- **Leveling**: LOS Stabilization
- **Rotary joints**: Autotracker
- **Drift control**: Videotracker

#### 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;

*Specifications subject to change without notice*