

SPS-500 Precision Positioner

Cost Effective, High-Performance Positioning System

COBHAM

2009 Data Sheet

The most important thing we build is trust

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 reduce maintenance and EMI
- Zero backlash, highly reliable direct-drive eliminates gearboxes
- Lightweight – 35 lbs. (positioner only)
- Angular resolution of 21 bits (3 μ radians)
- 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



SPS-500

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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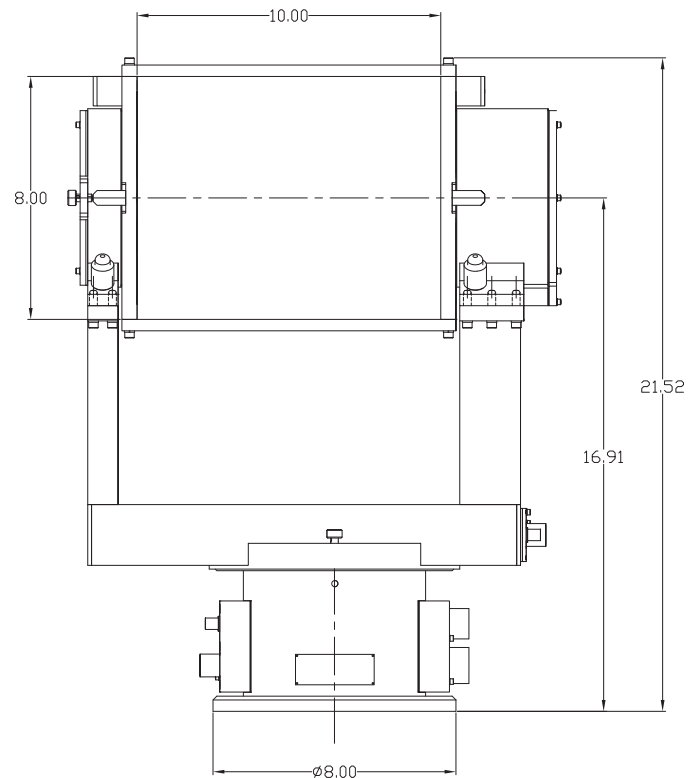
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SPS-500 Performance Specifications*

Resolution	21 bits (3 μ radians)
Accuracy	$\pm 0.0057^\circ$ ($\pm 100 \mu$ radians)
Repeatability	$\pm 0.0014^\circ$ ($\pm 25 \mu$ radians)
Velocity	0.01° to 90° /sec (nominal)
Acceleration	90°/sec ² (nominal)
Travel	
Azimuth	$\pm 270^\circ$ standard
Elevation	-15° to + 95° standard
Resonant Frequency	Azimuth >30 Hz
(payload dependent)	Elevation >40 Hz
Base Motion Stabilization with high performance-FOG	<100 μ radians RMS
Motor Torque, Peak (nominal)	10 ft-lb AZ 5 ft-lb EL

Mechanical Data (not to scale)



Yoke Configuration

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
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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
Autotracker	Turnkey systems	Drift control
Video tracker		

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

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