

SPS-1000 Precision Positioner

Cost Effective, High-Performance Positioning System

COBHAM

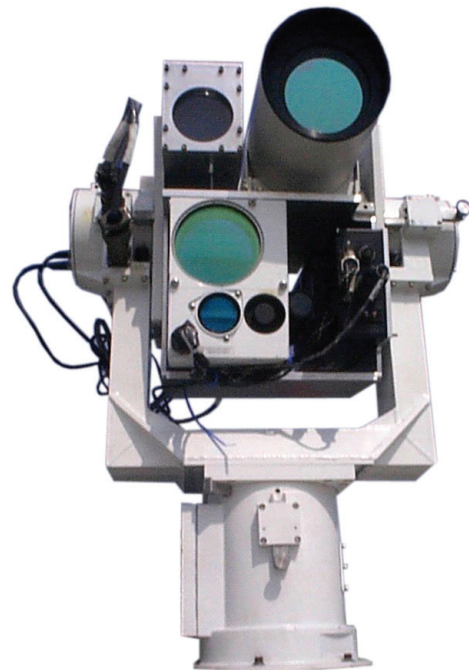
2009 Data Sheet

The most important thing we build is trust

SPS Series Precision Positioners

Features

- Cost-effective solution for precise positioning of payloads weighing up to 150 lbs.
- Easily adapted to T-bar, yoke or 3-axis configurations
- Brushless, direct drive motors reduce maintenance and EMI
- Zero backlash, highly reliable direct-drive eliminates gearboxes
- Lightweight – 75 lbs. (positioner only)
- Angular resolution of 21 bits (3 μ radians).
- High-speed microprocessor control
- C-based firmware: fast response, easy to use, flexible
- Controlled by analog joystick, or digitally via PC
- Suitable for military land, sea and airborne environments.



SPS-1000

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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Atlantic Positioning Systems doing business as Cobham Sensor Systems

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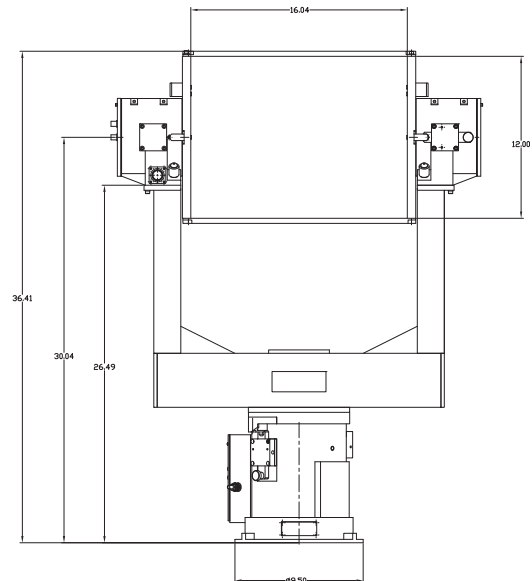
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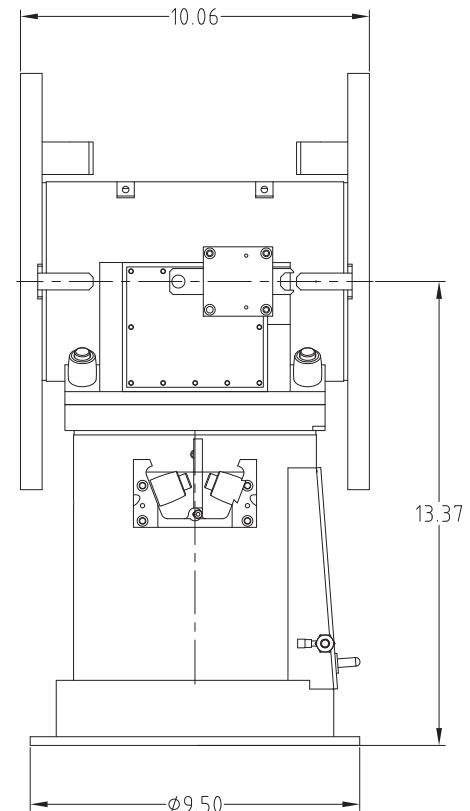
SPS-1000 Performance Specifications*

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	$\pm 176^\circ$ standard
Azimuth	$\pm 180^\circ$ optional
Elevation	-15° to +95° standard
Resonant Frequency	Azimuth >30 Hz
(payload dependent)	Elevation >40 Hz
Base Motion Stabilization with high performance-FOG	<50 μ radians RMS (depending on PSD)
Motor Torque, (Peak)	20 ft-lb AZ
	10 ft-lb EL

Mechanical Data (not to scale)



Yoke Configuration



Post 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, a pedestal-safe switch allowing maintenance 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	75 lb. (nominal)
Payload	Up to 150 lb.

Mechanical

Mounting	9.612 inch dia. bolt circle, with 6 equally spaced 0.27 inch dia. holes
LOS	12.62 inches above the pedestal base (Nominal) for Post and T-Bar configurations 18.00 inches for Yoke configuration

Environmental

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

Options

		Transportable base
Sensors	Joystick	Payload/system integration
Slip rings	Risers	Remote stow pins
Leveling	LOS Stabilization	Optical encoders
Rotary joints	Autotracker	Turnkey systems
Drift control	Video tracker	Image stabilization

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