

SPS-4000 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 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 μ radians 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



SPS-4000

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 Performance Specifications*

Resolution	24 bits (0.4 μ radians with Inductosyns)
Accuracy	$\pm 0.0007^\circ$ ($\pm 12 \mu$ radians)
Repeatability	$\pm 0.0003^\circ$ ($\pm 6 \mu$ 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 (payload dependent)	Azimuth >30 Hz Elevation >40 Hz
Base Motion Stabilization with high performance-FOG	<25 μ radians RMS (depends on PSD)
Motor Torque, Peak (nominal)	250 ft-lb AZ 100 ft-lb EL

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

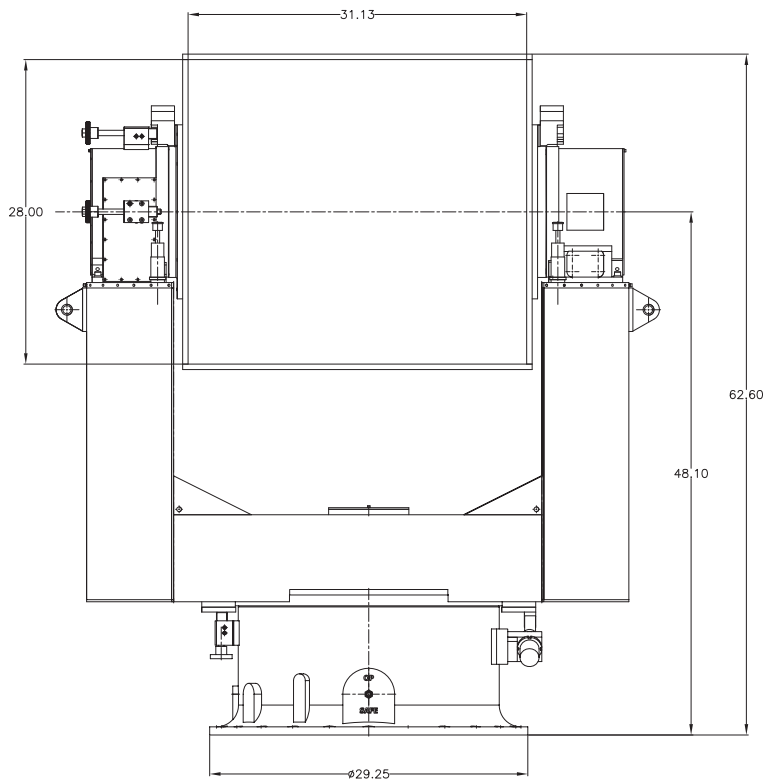
Environmental

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

Options

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

Mechanical Data (not to scale)



Yoke Configuration

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