

APS-50 Pan and Tilt System

Axsys Motion Control Products

www.axsys.com



Axsys Technologies designs and manufactures high performance pan and tilt positioning systems that are ideal for a wide range of surveillance, reconnaissance and targeting applications in both military and commercial markets.

All Axsys precision pan and tilt systems combine our high power DC torque motors and high accuracy resolvers directly coupled to the payload for maintenance free operation with zero backlash. The Axsys APS-50 Pan and Tilt system takes advantage of these technologies to provide one of the industry's most precise, long range positioners. With a payload capacity of up to 50 pounds and optional cradle and arm support, the APS-50 is ideally suited for multi-sensor platforms. The integrated 16 bit resolver (65K counts/rev) is directly coupled to each axis for superior control and accuracy, making it ideal for both long range IR and Visible camera systems. Built-in control electronics and software provide precise, smooth motion at all speeds. An integrated slip ring is standard on every unit, providing continuous rotation in the pan axis.

The APS-50 is also available with optional inertial gyro stabilization, making it ideal for ground-based and maritime shipboard mounting, mast mounting, or many other applications requiring dynamic position control.

FEATURES

- Direct drive brushless torque motors
- 16 bit high accuracy resolver technology
- Built-in control electronics and software
- 360° continuous pan angle
- Environmentally sealed to IP67 standard
- Zero backlash
- Smooth low speed motion to 0.01°/sec
- Marine package (optional)
- Gyro-stabilization (optional)

BENEFITS

- Direct drive technology provides maintenance-free operation with zero backlash
- High resolution and precision, allow for industry "best" long range pointing accuracy and stability
- Precise and smooth operation at all speeds
- Low cost of ownership
- Supports Multi-Sensor payloads up to 50 pounds (6.8kg)

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System Specifications

Operating Voltage	16 – 32 VDC
Operating Temperature	-32°C to +70°C (-25°F to +158°F)
Pan Speed	0.01 to 300°/sec
Pan Angle	Continuous
Tilt Speed	0.01 to 300°/sec
Tilt Angle	±50°
Resolution	0.005°
Position Repeatability	±0.01°
Position Accuracy	±0.1°
Backlash	None
Payload	50 lbs (22.7 kg)
Continuous Torque	1000 oz-in (7.06 N-m) @ 24 VDC
Weight	37 lbs
Environmentally Sealed	IP67

Control Specifications

RS-232 or optional RS-422 interface

Proprietary motion control algorithm developed specifically for Pan and Tilt systems

Predictive control loop based on a single adjustment for servo tuning greatly simplifies optimization for different payloads

Hardware and software control of position, speed, and acceleration at all times

Trapezoidal speed profile eliminates overshoot at commanded position

Slip Ring: An integrated slip ring in the pan axis. Provides user a minimum of 11 channels

Gyro Stabilization Specifications

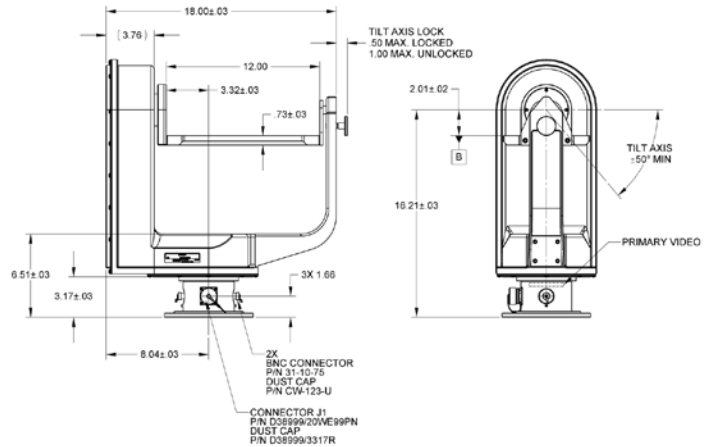
Maintains pointing accuracy within 1 milliradian of residual motion with input frequencies up to 5 Hz

Higher frequency inputs can be stabilized with electronic stabilization of imaging system.

Dual gyro modes to optimize performance for
1) boats and 2) masts and towers

Configuration Options

Gyro Stabilization	2-Axis Pan and Tilt
Support Assembly	Cradle and Arm (Custom configurations available upon request)
Marine Package	Includes upgraded materials, improved seals and powder coat paint with epoxy primer
Finishes	Sky white polyurethane paint (standard) Sand, black, and other custom colors and finishes available upon request



With Cradle & Arm