

# APS-15 Pan and Tilt System

## Axsys Motion Control Products

[www.axsys.com](http://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.

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-15 combines the benefits of our high precision positioning mechanisms into a small, economic package capable of supporting payloads up to 15 pounds. The APS-15 is ideal for positioning a wide range of high performance, short-to medium-range surveillance sensors such as visible and infrared cameras. Built-in control electronics and software provide precise, smooth motion at all speeds. An integrated slip ring provides for continuous rotation in the pan axis.

The APS-15 is also available with optional inertial gyro stabilization, making it ideal for maritime shipboard mounting, mast mounting, or other applications requiring dynamic position control.

## FEATURES

- Direct drive 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
- Precise and smooth operation at all speeds
- Low cost of ownership
- Supports wide range of payloads up to 15 pounds (6.8kg)

# APS-15 Pan and Tilt System

## System Specifications

Operating Voltage	18 – 32 VDC
Peak Current	8 Amps/4 Amps per axis
Operating Temperature	-25°F to +158°F (-32°C to +70°C)
Pan Speed	0.01 to 300°/sec
Pan Angle	Continuous
Tilt Speed	0.01 to 300°/sec
Tilt Angle	+45°, -80°
Resolution	±0.005°
Position Repeatability	±0.1°
Position Accuracy	±0.25° Min.
Backlash	None
Payload	15 pounds (6.8kg)
Continuous Torque	300 oz-in @ 24 VDC
Weight	15 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

Continuous hardware and software control of position, speed, and acceleration at all times

Trapezoidal speed profile eliminates overshoot at commanded position.

## Gyro Stabilization Specifications

Maintains pointing accuracy within 1 milli-radian 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 vehicles and 2) masts and towers

## Configuration Options

Gyro Stabilization	2-Axis Pan and Tilt
Marine Package	Includes upgraded materials, improved seals and powder coat paint with epoxy primer
Finishes	Sky White Polyurethane paint (standard) Semi-gloss Black per FED-STD-595 #27038 Sky White TGIC-Polyester Powder Coat Sky White Powder coat with Epoxy Primer (Marine finish) Sand color # MIL-C-46168 Type II with primer 53022B Sand color # MIL-C-46168 Type IV Custom colors available

