

AL-4012S EI/Az Positioner

Maximize Transportability and Accelerate Deployment of High-Accuracy Tracking Applications

The AL-4012S is a transportable light-weight solution for field-based applications that require highly accurate tracking capabilities, such as UAV ground-to-air command and control, telemetry and stabilized point-to-point RF communications. The AL-4012S is a self-contained elevation over azimuth tracking positioner that delivers high performance under the most demanding field conditions. The easy-to-deploy AL-4012S may be ground-based, transportable or shipboard (with additional stabilization) to fit your application needs.

The system can be quickly modified to meet customers' specific requirements based on ORBIT's field-proven building blocks. The system is easy to assemble and dismantle and includes comprehensive BIT (Built-In-Test) capabilities for the entire pedestal.



Typical Applications



Air - Ground
Communication



Aeronautical
Test Telemetry



Land/Sea P2P
Communication

Supported Antenna Reflector Size

AL-4012S

36cm | 60cm | **1m** | 1.2m | 1.8m | 3m | 5m | 10m

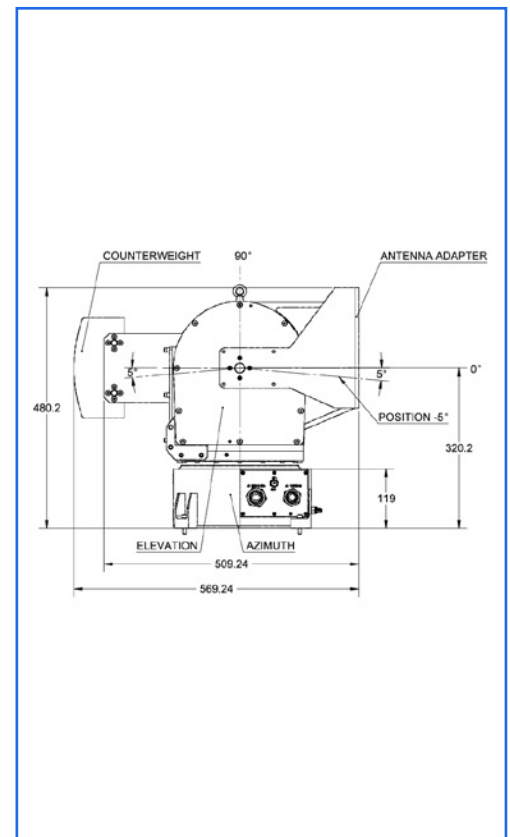
Key Features

- Elevation Over Azimuth axes configuration (stabilization is optional)
- Digital servo amplifier to control antenna motion
- Highly dynamic with low backlash for highest accuracy
- Brushless motor and planetary gear assembly
- Modular & easily maintainable
- Robust, reliable and environmentally durable

AL-4012S Operating Specifications*

Parameters	Specification
Bearing Moment Capacity (static)	400 Nm (300 ft-lb)
Maximum Payload	45.5 kg (100 lb)
Delivered Torque	120 Nm (90 ft-lb)
Peak Torque	160 Nm (120 ft-lb)
Peak Velocity	Up to 30°/Sec
Peak Acceleration	Up to 30°/Sec ²
Backlash	0.08 deg
Data Take-off Accuracy	± 0.04 deg
Orthogonality	0.02 deg max
Limit-to-Limit Travel	± 200 deg Azimuth** -3 up to +183 deg
Mechanical Stops (Shock absorber mechanism)	-7 up to +187 deg Elevation
Motor Type (with integral encoder and FAIL-SAFE brake)	Brushless
Position Indicator	Absolute Encoder
AC Input Voltage	110/220 V
Power Consumption	0.5 kVA
Weight (including base riser)	40 kg (88 lb)
Rotary Joint (AZ) ²	option
Slip-Ring (AZ) ²	option
Antenna Motion System	Integrated Digital Servo Amplifier (DSA)
Position Control Interface	RS-422
Operational Safety	Over-current limit, Vage and temperature protection, electrical limit switch and mechanical stop.

General View of AL-4012S



All measurements are subject to change without prior notification

* Specifications apply both for elevation and azimuth axes unless otherwise specified

** When slip-ring or rotary joint options are selected, the azimuth travel is Nx360 degrees

AL-4012S Environmental Specifications

Parameters	Specification
Temperature range	Operating -25°C to 55°C (-13°F to +131°F)
	Storage -40°C to 70°C (-42°F to +159°F)
Relative humidity (including condensation)	Operating Up to 95% @ 25°C (80°F)
	Storage 100% @ 25°C (80°F)
Rain	< 150 mm/hour (6 in/hour)
Wind speed	Operating Continuous 72 km/h (45 mph) for 1.0m dish size 65 km/h (40 mph) for 1.2m dish size
	Intermittent (gusts) with reduced performance Up to 80 km/h (50 mph) for 1.0m dish size Up to 72 km/h (45 mph) for 1.2m dish size
	Non-Operating Transport, Survival (Both axes stowed, with elevation axis at zenith (90°)) 96 km/h (60 mph) for 1.0m dish size 96 km/h (60 mph) for 1.2m dish size
Altitude	Operating 12,000 ft (3,500 m)
	Non-operating (transport) 40,000 ft (12,000 m)
Insects and fungi	Designed for tropical regions (using fungus resistant materials)
Salt sea atmosphere, sand, dust, solar radiation, vibration & shock	Suitable for outdoor, ground-mobile applications, operating under environmental conditions encountered in coastal regions