AL-4012S El/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.

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

Typical Applications

Air - Ground Communication

Aeronautical Test Telemetry

Land/Sea P2P Communication

Supported Antenna Reflector Size

AL-4012S

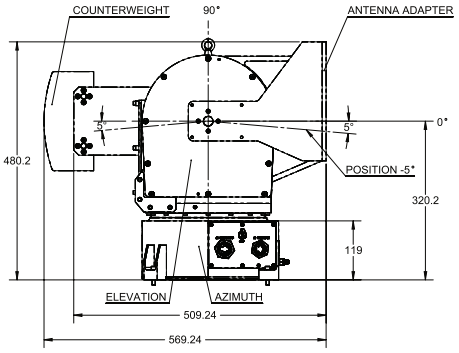
36cm	60cm	1m	1.2m	1.8m	3m	5m	10m

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.

* 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

General View of AL-4012S



All measurements are subject to change without prior notification

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		

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