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Connectivity in Motion

AL-4018D Dual Drive El/Az Positioner

Zero Backlash for Unsurpassed Tracking Stability

The AL-4018D is a highly accurate, dual drive elevation over azimuth tracking positioner capable of supporting high torques with a relatively small pedestal. The AL-4018D may be ground-based, transportable or shipboard (with additional stabilization), which makes it suitable for diverse tracking applications such as aeronautical test telemetry and earth observation LEO (Low Earth Orbit) satellites tracking and navigation.

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

Typical Applications

- Aeronautical Test Telemetry
- LEO/MEO Satellite Tracking
- Weather Radar

Supported Antenna Reflector Size

AL-4018D

36cm	60cm	1m	1.2m	1.8m	3.7m	5m	10m
				✓	✓		

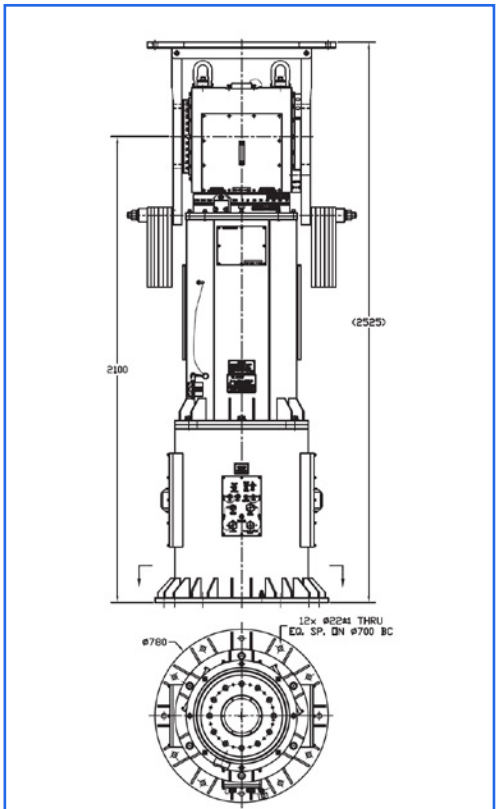
Key Features

- Elevation Over Azimuth axes configuration (stabilization is optional)
- Dual drive, zero backlash enabling high torque and stability
- Digital servo amplifier to control antenna motion
- Brushless motor and planetary gear assembly
- Modular & easily maintainable
- Robust, reliable and environmentally durable

AL-4018D Operating Specifications*

Parameters	Specification
Bearing Moment Capacity (static)	8150 Nm (6000 ft·lb)
Maximum Payload	490 kg (1100 lb)
Delivered Torque	1500 Nm (1100 ft·lb)
Peak Torque	1900 Nm (1400 ft·lb)
Peak Velocity	Up to 30°/Sec
Peak Acceleration	Up to 30°/Sec²
Backlash	Zero (dual drive)
Data Take-off Accuracy	± 0.04 deg
Orthogonality	0.02 deg max
Limit-to-Limit Travel	± 200 deg Azimuth** -5 up to +185 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	5 kVA max
Weight (including base riser)	680 kg (1500 lb)
Rotary Joint (AZ)²	option
Slip-Ring (AZ)²	option
Antenna Motion System	Integrated Dual Digital Servo Amplifier (DDSA)
Position Control Interface	RS-422
Operational Safety	Over-current limit, voltage and temperature protection, electrical limit switch and mechanical stop.

General View of AL-4018D



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-4018D Environmental Specifications

Parameters			Specification
Temperature range	Operating		-25°C to 55°C (-13°F to +131°F)
	Storage		-40°C to 70°C (-40°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	100 km/h (62 mph) for 1.8m dish size 80 km/h (50 mph) for 3.0m dish size
		Intermittent (gusts) with reduced performance	Up to 105 km/h (65 mph) for 1.8m dish size Up to 90 km/h (56 mph) for 3.0m dish size
	Non-Operating Transport, Survival	Both axes stowed, with elevation axis at zenith (90°)	192 km/h (120 mph) for 1.8m dish size 192 km/h (120 mph) for 3.0m dish size
Altitude	Operating		3,500 m (12,000 ft)
	Non-operating (transport)		12,000 m (40,000 ft)
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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