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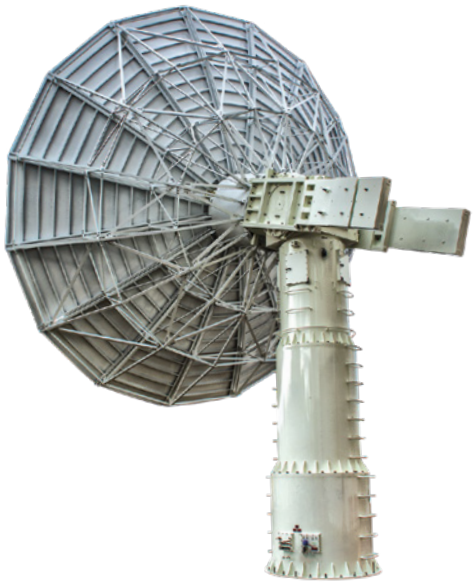
Connectivity in Motion

# AL-4049-1D EL/AZ Antenna Positioner



## Heavy-Duty, High Quality, Telemetry Tracking Positioner

The AL-4049-1D, Elevation over Azimuth Antenna Positioner, is designed to support large antennas (7.0-11.0 m in diameter). Accordingly, it is well-equipped to meet the demanding requirements of applications such as longer range aeronautical telemetry tests, tracking of LEO (Low Earth Orbit) satellites for high resolution earth observation missions and tracking of MEO (Medium Earth Orbit) satellites for navigation applications. The AL-4049-1D is also suitable for tracking GEO (Geostationary Earth Orbit) satellites (for the higher bands such as Ka and above).

The AL-4049-1D model is a high performance pedestal, which is reflected in the "ZERO" backlash, high orthogonality (up to 0.02°) and high encoder accuracy (0.02° RMS).

### Typical Applications

LEO/MEO
Satellite Tracking

Aeronautical
Test Telemetry

### Supported Antenna Reflector Size

| | | | | | | AL-4049-1D | |
|---|---|---|---|---|---|---|---|
| 36cm | 60cm | 1m | 1.8m | 3m | 5m | 7m | 11m |
| 1.18ft | 1.96ft | 3.28ft | 5.90ft | 9.84ft | 16.40ft | 22.96ft | 36.08ft |

## Key Features

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

# EL/AZ. TRACKING PEDESTAL SPECIFICATION

## 1. Performance Specifications

| PARAMETERS | | | UNITS | VALUES | |
|---|---|---|---|---|---|
| | | | | ELEVATION | AZIMUTH |
| **Bearing moment capacity (static)** | | | Nm (ft-lb) | 500,000 (368,781) | |
| **Maximum Payload (Including Antenna, Electronic and RF Equipment and Balance Weights)** | | | Kg (lbs) | Up to 6,000 (13,227.74) | |
| **Delivered torque (Dual-drive)** | | | Nm (ft-lb) | 52,000 (38,353) | |
| **Peak torque (Dual-drive)** | | | Nm (ft-lb) | 77,500 (57,161) | |
| **Peak velocity** | | | Deg/sec | 15 | 15 |
| **Peak acceleration** | | | Deg/sec2 | 10 | 10 |
| **Power gearing backlash (Dual drive torque-bias)** | | | Deg. | "ZERO" | |
| **Data take-off accuracy** | | | Deg.RMS | 0.02 | 0.02 |
| **Positioner Orthogonality** | | | Deg. | ±0.020. | |
| **Travel Limits** | ***Azimuth (with Cable-Wrap Option) Continuous Rotation Option Available*** | **Software limits** | Deg. | ± 400° | |
| | | **First Electrical** | Deg. | Between ± 405° to ± 410° | |
| | | **Second Electric** | Deg. | Between ± 415° to ± 420° | |
| | **Elevation** | **Software limits** | Deg. | - 4° DOWN and +184° UP | |
| | | **Electrical Down** | Deg. | between [-5 to –7] | |
| | | **Electrical Up** | Deg. | between [+185to +187] | |
| **Mechanical stops (Elevation axis only) (Shock absorber mechanism)** | | **Down** | Deg. | between [-10 up to –12] | |
| | | **Up** | Deg. | between [+190 up to +192] | |
| **Stow lock provisions** | | | Deg. | 90 | 0 |
| **Motor type with encoder and FAIL-SAFE brake** | | | | AC Brushless | |
| **Air Dryer system for Feed Pressurization** | | | | Optional | |
| **Emergency Stop** | | | | YES | |

## 2. Dimensions and Weight

The maximum weight of the **AL-4049-1D** Pedestal will not exceed: ***6,700 Kg / 14,770.97lbs***

The maximum weight of **AL-4049-1D** Positioner System including antenna and balance weight will not exceed: ***15,500 Kg / 34,171.65lbs***

## 3. Power Requirements

Pedestal AC Input Voltage: **3 Phase, 230/400 VAC** ±10%, 50-60 Hz

Maximum Continuous AC Input Power consumption – **up to 40 KVA**

Maximum Peak AC Input Power consumption – **up to 70 KVA**

## 4. Environmental Specifications

The Pedestal is capable of withstanding the environmental conditions listed below (adequate for ground-fixed, OUTDOOR applications), without sustaining any damage or degradation in performance.

| PARAMETERS | | | UNITS | VALUES |
|---|---|---|---|---|
| **Temperature Range** | **Operating** | | °C (°F) | -30 to +55 (-22 to +131) (*) |
| | **Storage** | | °C (°F) | -40 to +70 (-40 to 158) (*) |
| **Relative humidity (including condensation)** | | | % | Up to 100 |
| **Rain** | | | mm(inches)/hour | 130 (5.11) |
| **Wind speed For 10m Dish dia. F.D= 4570mm** | **Operating** | **Continuous** | Km/h (MPH) | 80 (50) |
| | | **Intermittent (GUSTS)** | Km/h (MPH) | 90 (56) |
| | **Non-operating, Survival** | **Pedestal in STOW-LOCK mode (Both axes stowed, with elevation axis at zenith (90°)** | Km/h (MPH) | 180 (112) |
| **Altitude** | **Operating** | | Meters/Feet | 3,048 (10,000) |
| | **Non-operating (Transport)** | | Meters/Feet | 10,000 (33,000) |
| **Insects and fungi** | | | Operable and Storable within environments containing fungus | |
| **Salt sea atmosphere, sand, dust, solar radiation** | | | The unit will operate without degradation in performance and will not sustain any physical damage during and after exposure to environmental conditions encountered in deserts or coastal regions | |
| **Induced vibrations, accelerations and shocks** | | | The unit *(with both axes stowed)* withstand vibrations, shocks and accelerations induced during vehicular transport over paved roads or during rail, air, or sea transport | |

(*) With heating