



## 2.4AEBP-3m Elevation-Over-Azimuth Antenna Positioner

Suitable for 3.0m antenna systems operating in X, S and L band applications

The 2.4AEBP-3m antenna positioner is designed and built to provide high reliability while withstanding severe environmental conditions. It is a high-quality, high-precision elevation-over-azimuth satellite tracking system suitable for operation at X-Band, and below. The 2.4AEBP-3m utilizes the proven orbital data bus (ODB) technology to provide integrated control of the antenna positioner and RF payload. Superior engineering, precision manufacturing, and strict quality control standards result in maintenance-free operation, making the 2.4AEBP-3m the optimal choice for service in remote locations and hostile climates.

### Standard System Features

The 2.4AEBP-3m antenna positioner includes feed mounting poles, ACU-2 antenna control unit, and a complete maintenance tool kit. Gold-on-gold contact slip rings facilitate unlimited azimuth rotation, and the positioner operates on one, or two RF channels. The positioner also provides standard options to provide AC, or DC power, and 100BASE-T Ethernet on the elevation arm.



### System Control and Tracking

- ACU-2 antenna control unit is standard and enables flexible control options
- Tracks satellites at X-Band and below without keyhole effect
- Customized controller interface options are available

### Motors and Gears

- Mechanical system components are fully integrated, with IP65-rated brushless servomotors and integrated brakes, matched and tuned motor drives, and heavy duty gears.
- Gears are automatically heated to maintain optimal performance at temperatures as low as -40°C
- Gears are completely enclosed in a cast housing and operate inside a controlled, optimal environment to increase their service life; no annual lubrication required

### Pressurization

- Antenna positioner and feed are pressurized with dehydrated air or nitrogen to prevent corrosion of system components
- Dry air is supplied using conventional transmission line dehydrator technology
- Temperature and humidity sensors in the electrical cabinet and feed are monitored by the antenna control unit, which automatically purges the system of moisture
- System remains operational if pressurization fails

### Reflectors and Feeds

- Supplied with a 3.0m spun aluminum reflector
- Equipped with feed poles for use with Orbital Systems, Ltd. feeds
- Many feeds are available with optional downconverters and polarity switching
- Feeds are equipped with purge valves to expel moisture from the system
- Feed communication is integrated into the antenna control unit over ODB
- Typical 3.0m X and L-Band system performance is 26.2 dB/K and 9.5 dB/K, respectively

### Special Order Options

- Mains A/C power supplied through antenna positioner for elevation arm-mounted electronics
- Gigabyte Ethernet through antenna positioner
- Additional RF channels through antenna positioner
- Additional data pairs through antenna positioner
- Optical multi-mode fiber through antenna positioner

### Applications

The 2.4AEBP-3m antenna is typically used for the following applications.

- (EOS-DB) - Earth Observation Satellites - Direct Broadcast, tracking LEO and MEO satellites:
  - TERRA
  - AQUA
  - NPP
  - FY3
  - METOP
  - NOAA-POES
  - FY1
  - FY3
  - DMSP\*
  - JPSS-1\*
- TT&C - general satellite uplink and downlink telemetry, including microsats
- Radar applications for advanced meteorological and environmental analysis
- SARSAT reception of MEO satellites in S and L-Bands

\*Encrypted except when passing over the north and south poles

\*\*When available

## Operational Specifications

	Required	Continuous Capable
Azimuth Maximum Velocity.....	57°/ Sec	>60°/ Sec
Azimuth Maximum Acceleration.....	39°/ Sec <sup>2</sup>	>60°/ Sec <sup>2</sup>
Azimuth Maximum Torque.....		>1586 Nm (>1170 ft/lbs)
Azimuth Maximum Travel.....		Continuous Rotation
Elevation Maximum Velocity.....	9°/ Sec	>20°/ Sec
Elevation Maximum Acceleration.....	0.9°/ Sec <sup>2</sup>	>60°/ Sec <sup>2</sup>
Elevation Maximum Torque.....		>950 Nm (>700 ft/lbs)
Elevation Maximum Travel.....		184°
Brake Holding Torque.....		1947 Nm (>1436 ft/lbs)
Mechanical Total Tracking Accuracy.....		0.10°
Absolute Position Feedback Accuracy.....		±0.02°

## Electrical, Mechanical, and Environmental Specifications

Input Voltage, Frequency.....	208 -240 VAC, 20 A, 50/60 Hz, Single Phase
Input Amperage.....	Typical 5 A; Maximum 15 A; Uses Standard 20 A Breaker
Operating Altitude.....	3000m Above Sea Level
Operating Temperature.....	-40° C to +55° C
Operating Maximum Wind Speed.....	Continuous 60 km/h (40 mph), gust to 88 km/h (55 mph)
Maximum Wind Speed With Stow Pins Installed.....	200 km/h (125 mph)
Non-Operating Maximum Rain Load.....	25 cm (10 inches) Per Hour
Maximum Ice Load.....	13 mm (0.5 inches)
Weight.....	615 kg (1356 lbs)

## Electrical Cabinet and External Controls

The electrical cabinet is equipped with the following safety devices:

- Emergency stop switch
- Audible warning annunciator
- Visual warning indicator
- Padlocks to lock the left and right sides of the electrical cabinet

2.4AEBP-3m antenna positioners are compliant with CE Machinery Directive IEC 60204-1

