



## 3.0AEBP-3.7m

### Elevation-Over-Azimuth 3.7m Antenna Positioner

Orbital Systems 3.0AEBP-3.7m antenna positioner is designed and built to provide high reliability while withstanding severe environmental conditions. The high-quality, high-precision, elevation-over-azimuth, satellite tracking system is suitable for operation at S-band and below. The 3.0AEBP-3.7m utilizes the proven orbital data bus (ODB) technology providing integrated control of the antenna positioner and RF payload. Superior engineering, precision manufacturing and strict quality control standards, result in maintenance-free operation, which makes the 3.0AEBP-3.7m the optimal choice for service in remote locations and hostile climates.

#### System Features

Multiple reflector options are available with the Orbital Systems 3.0AEBP-3.7m antenna positioner. Standard equipment includes; feed mounting poles, ACU-2 antenna control unit and a complete maintenance tool kit. The antenna positioner also provides standard options for AC or DC power and 100BASE-T Ethernet on the elevation arm. Gold-on-gold contact slip rings facilitate unlimited azimuth rotation and the 3.0AEBP-3.7m antenna positioner operates on one, or two, RF channels.

#### System Control and Tracking

- ACU-2 antenna control unit is standard and enables flexible control options
- Tracks satellites at S-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 is required

#### Pressurization

- Antenna positioner are feed and 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 3.7m spun aluminum reflector
- Equipped with feed poles for use with Orbital Systems feeds
- Many feeds are available with optional downconverters and polarity switching
- Orbital Systems feeds are equipped with purge valves to expel moisture from the system
- Feed communication is integrated into the antenna control unit over ODB

#### Special Order Options

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



#### Applications

The 3.0AEBP-3.7m antenna positioner and its ancillary RF components are typically used for the following applications.

- General satellite uplink and downlink telemetry (TT&C), including microsats
- Radar applications for advanced meteorological and environmental analysis
- SARSAT reception of MEO satellites in S- and L- bands

## 3.0AEBP-3.7m Antenna Positioner

## Specifications

### Operational Specifications (Subject to change without notice)

	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 .....	900 Nm (664 ft/lbs) .....	>1500 Nm (1106 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 .....	900 Nm (664 ft/lbs) .....	>1500 Nm (>1106 ft/lbs)
Elevation Maximum Travel.....		184°
Brake Holding Torque .....		2300 Nm (>1696 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 Temperature .....	-40° C to +55° C
Operating Maximum Wind Speed .....	72 km/h (45 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.....	1134 kg (2500 lbs)
Safety, Emissions, and Machinery Directive Ratings .....	CE Compliant; Tested by Independent Labs

### Electrical Cabinet and External Controls

The electrical cabinet is equipped with the following safety devices:

- Emergency stop switch
- Audible warning annunciator
- Main Steps / Tie and Handle Points
- Visual warning indicator
- Padlocks to lock the left and right sides of the electrical cabinet

3.0AEBP-3.7m antenna positioners are compliant with CE Machinery Directive IEC 60204-1.

