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2.4AEHP-3.0m Positioner

Smartly designed and ruggedly built to withstand the most extreme global environments, the 2.4AEHP-3.0m antenna positioner from Orbital Systems is a high quality, high precision Instrument suitable for X, S and L band operation. The 3.0m elevation over azimuth positioner provides accuracy, flexible operation, and reliability unsurpassed in the industry.

Features

Orbital Systems' 2.4AEHP-3.0m Positioner comes standard with 3.0m Reflector, Feed mounting poles, Remote GPS antenna & cable, and comprehensive tool kit. This positioner is intended for use inside a radome but can be used outdoors in reduced wind load conditions as described in the specifications.

Reflector

- Manufactured from a single piece of spun aluminum and sectioned into 2 pieces
- Maintains surface accuracy to 18 GHz
- Designed to drain and deflect rainwater away from electrical system components

Pressurization

- Antenna positioner and feed are pressurized with dehydrated air or nitrogen to prevent corrosion of system components
- 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

Motors and Gears

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

Tracking

- Internal precision GPS location and timing references
- System controller is housed inside the electrical cabinet and does not require indoor rack space
- Azimuth axis speed enables tracking of X-band satellites without keyhole effect
- System stores the TLE for each satellite and initiates tracking using a simple command for the named satellite

Feed

- A variety of matching feeds are available for various applications
- High performance compared to commonly available feeds: Typical X-L feed performance is 26db/°K and 9 db/°K
- Feed control is integrated with the antenna positioner controller module
- Built in purge valve to ventilate the entire antenna when excess humidity is detected in the electrical cabinet or in the feed
- Cables to the feed are carried internally and are rated for life of product

Applications

With the corresponding RF components installed, the 2.4 AEHP-3.0m Positioner can be used in the following typical applications.

- EOS reception of X-Band Terra, Aqua NPP, JPSS1, and other X and L Band EOS satellites.
- SARSAT reception of MEO satellites in S and L Bands.
- General telemetry downlinks and uplinks in X, L, and S-Band

2.4AEHP-3.0m Positioner Specifications

Operational Specifications

	Required	Continuous Capable
Azimuth Maximum Velocity	57°/ sec	>60°/ sec
Azimuth Maximum Acceleration	39°/ sec^2	>60°/ sec^2
Azimuth Maximum Torque	900 Nm (664 ft/lbs)	>1500 Nm (1106 ft/lbs)
Azimuth Maximum Travel		420°
Elevation Maximum Velocity	9°/ sec	>20°/ sec
Elevation Maximum Acceleration	0.9°/ sec^2	>60°/ sec^2
Elevation Maximum Torque	900 Nm (664 ftlb)	>936 Nm (690 ft/lbs)
Elevation Maximum Travel		182°
Brake Holding Torque		2300 Nm (>1696 ft/lbs)
Mechanical Total Tracking Accuracy		0.1°
Absolute Position Feedback Accuracy		±0.02°

Electrical, Mechanical, and Environmental Specifications

Input Voltage, Frequency	208-240 VAC, 20A, 50/60 Hz, single phase
Input Amperage	Typ 5A, Max14A, Fuse at 16-20A
Operating Temperature	-40° C to +55° C
Operating Maximum Wind Speed	64 k/hr (40 Mph) *w/out Radome
Wind Speed Maximum with Stow Pins Installed	200 k/hr (125 Mph)
Non-operating Maximum Rain Load	25 cm (10") / hr
Maximum Ice Load	13mm (0.5")
Antenna Weight	620 kg (1364 lbs)
Safety, Emissions, and Machinery Directive Ratings	CE Compliant; Tested in Independent Labs

CE Machinery Directive Compliance

2.4AEHP-3m antenna positioners manufactured after May 2012 are compliant with the CE International Machinery Directive IEC 60204-1.

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

Visual Warning Indicator (Left)
And Emergency Stop Switch (Right)

Padlock
(Typical Left and Right Sides)

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Prices and specifications are subject to change without notice.