ascSignal™

PRODUCT SPECIFICATIONS

S-band and C-band Weather Radar Antenna/Pedestal Systems

These systems provide state-of-the-art brushless servo control electronics, using a precision commercial off-the-shelf (COTS) actuator in elevation and a compound planetary drive train in azimuth.

The S-Band and C-Band weather radar systems are the first in a family of advanced weather radar antenna/pedestal systems from ASC Signal. The family meets ISO 9001 specifications and consists of a number of different diameter antennas and pedestals operating in S-band or C-band frequencies. This includes the antenna system used for the NEXRAD program.

Features include replaceable main bearing (without disturbing the antenna), main sump, slip ring brush block assemblies and gearbox double lip shaft seals. These systems provide state-of-the-art brushless servo control electronics, using a precision commercial off-the-shelf (COTS) actuator in elevation and a compound planetary drive train in azimuth. This provides for smooth positioning of the antenna in elevation and continuous rotation in azimuth. All antenna sizes and frequencies use the proprietary NEXRAD feed design concept to minimize radiation sidelobe and reduce ground reflections. The reflector surface tolerance results in a high gain and high efficiency antenna performance. These antenna/pedestal systems are capable of continuous azimuth scanning and incremental stepping or sector scanning in elevation to support identification and tracking of meteorological phenomena from remote sites. These systems position the radar antenna in any azimuth and elevation orientation within the specified travel limits to allow a high degree of accuracy in tracking storm movement.

- Lightweight aluminum reflector antenna
- High antenna gain performance
- Single and optional dual polarization
- Feed forward servo compensation
- Optional hand-held controller
- Elevation fail-safe brake

SPECIFICATIONS

S-band and C-band Weather Radar Antenna/Pedestal Systems

Electrical Performance

Antenna Diameter (meters)	3.7	4.5	4.5	6.1	6.1	8.5
Operating Frequency (GHz)	5.4-5.9	2.7-2.9	5.4-5.9	2.7-2.9	5.6-5.65	5.6-5.6
Polarization	linear	linear	linear	linear	linear	linear
3 dB Beamwidth (nom.)	1.05°	1.7°	.95°	1.25°	.65°	.5°
Gain (min.)	43.6 dBi	39.8 dBi	45 dBi	42.3 dBi	47.5 dBi	51.6 dBi
First Sidelobe Level	-27 dB	-25 dB	-30 dB	-26 dB	-26 dB	-26 dB
Cross-Polarization	-27 dB	-27 dB	-27 dB	-27 dB	-27 dB	-27 dB
Peak Power (max.)	350 kW	800 kW	350kW	1 MW	250 kW	500 kW
Average Power (max.)	700 W	1600 W	700 W	2 kW	125 W	1 kW
VSWR (max.)	1.4	1.4	1.4	1.45	1.2	1.45
Weight (kg)	300	400	400	614	614	1020

Positioner Performance for 8 .5 m , 6.1 m

Travel	
Azimuth	continuous
Elevation	-3° to +92°
Velocity	
Azimuth	.05°/sec to 36°/sec
Elevation	.05°/sec to 15°/sec
Acceleration	
Azimuth	18°/sec^2
Elevation	12°/sec^2
Position Accuracy	
Azimuth	+/- 10°
Elevation	+/- 10°
Pedestal Net Weight	5910 kg

Positioner Performance for 4.5 m, and 3.1 m

Travel	
Azimuth	continuous
Elevation	-5° to + 90°
Velocity	
Azimuth	.05°/sec to 36°/sec
Elevation	.05°/sec to 36°/sec
Acceleration	
Azimuth	20°/ sec^2
Elevation	20°/ sec^2
Position Accuracy	
Azimuth	+/- .10°
Elevation	+/- .10°
Pedestal Net Weight	4657 kg

Shipping Information

6.1 m antenna	Dimensions (L x W x H)(m)	Gross Weight (kg)
Box 1	3.8 x 1.7 x 1.5	991
Box 2	1.3 x 1.3 x 1	198
6.1 m pedestal		
Box1	2.2 x 2.2 x 2.2	2075
Box2	2.5 x 2.5 x 2.4	3082
Box3	1.3 x 1.0 x 1.0	94
8.5 m antenna		
Box 1	5.3 x 1.7 x 2.4	1100
Box 2	.9 x .5 x .6	38
Box 3	2.1 x 1.3 x 1.5	327
Box 4	2.9 x .7 x. 7	320
Box 5	5.0 x 1.2 x .3	105
8.5 m pedestal		
Box 1	2.2 x 2.2 x 2.2	2075
Box 2	2.5 x 2.5 x 2.4	3082
Box 3	1.3 x 1.0 x 1.0	94
Box 4	1.5 x 1.5 x 1.3	1136

Environmental

Temperature	
Operating	-40°C to + 45°C
Non-operating	-55°C to + 65°C
Humidity	up to 98% at 40°C
Operation	in a radome

ISO 9001 AIB VINCOTTE CERTIFIED FIRM

Call today for pricing and interface details for your application. ASC Signal also supplies custom design, system integration, field installation, and test services.

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