

Model 930A Antenna Control System

Cost-Effective Inverter Drive Control



Precision Satellite Tracking and Control

Ethernet Interface

Full Software Upgradeability

Overview

For over 50 years General Dynamics SATCOM Technologies' experienced engineering staff has been developing high-precision, economical satellite tracking and control systems. As the world's leading manufacturer of satellite and ground-based products and services, our systems are designed using cutting edge technology. Our control systems can be used with almost any antenna and support a wide range of applications. The systems feature an easy-to-use, modern Ethernet interface, and are software upgradeable to protect your investment. All control systems come with an end-to-end warranty and are supported 24/7/365 days a year by our technical customer support team.

System

Our latest Antenna Control System, the Model 930A, offers economical satellite tracking and control. It is ideally suited for single AC fixed antennas and includes an Antenna Control Unit (ACU), Internal Tracking Receiver (TRU) and a Power Drive Unit (PDU). The Model 930A is our replacement for our long-standing Model 7134 Antenna Controller and is backwards compatible with our reliable Model 7150 Power Drive Units.

Tracking Accuracy - Enhanced Memory Track

Normally better than 10% of the receive beamwidth in winds of 30 mph gusting to 45 mph, satellite inclination of up to 5°.

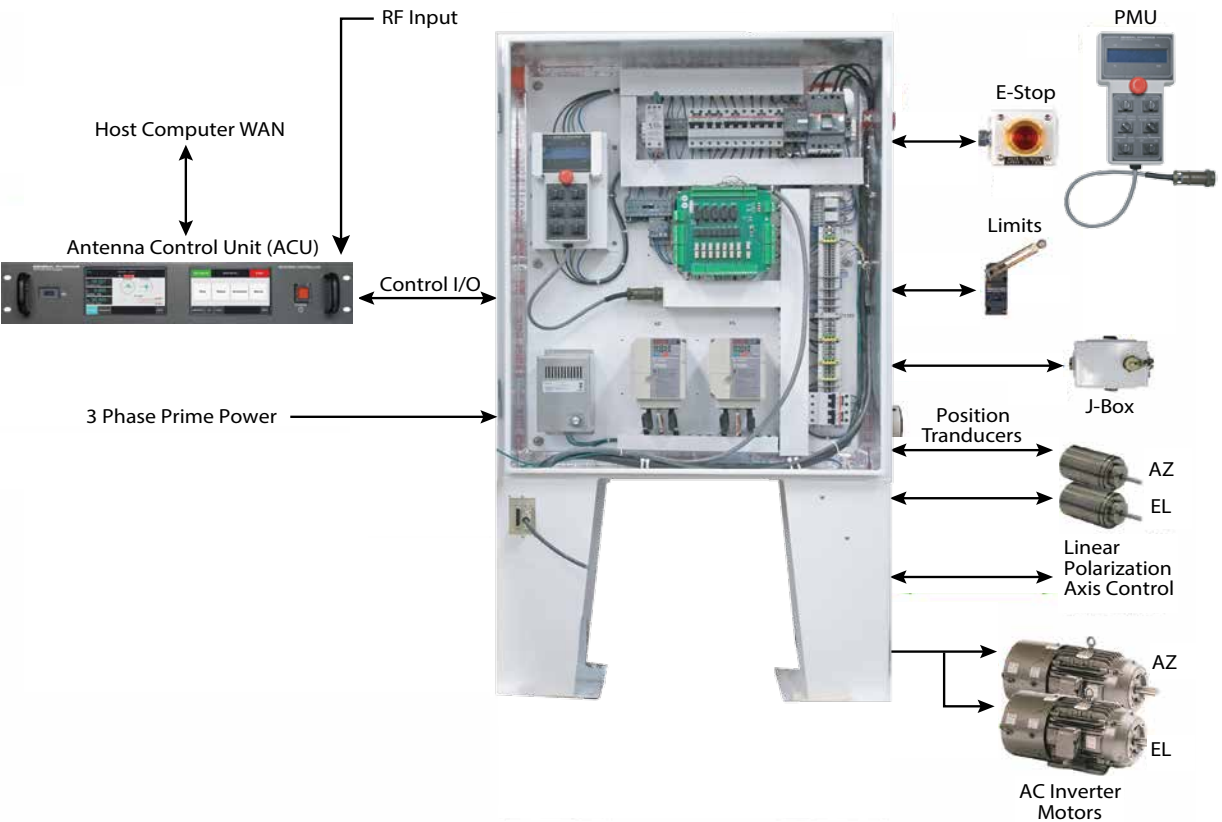
Pointing Accuracy

Normally better than 10% of the receive beamwidth, RMS in winds of 30 mph gusting to 45 mph. This includes all drive train errors, but excludes structural errors between the position transducers and RF beam.

Features

- Tracking, Pointing, and Acquisition modes
- Ideal for single AC motor (per axis) antennas
- Stable to 5° inclined GEO targets

Operational Modes		
Tracking	Pointing	Other
Enhanced Memory Track Steptrack	Intelsat 11 Preset Designate TableTrack	Maintenance Manual Stop Computer Simulator Polarization Stow



SPECIFICATIONS

- Tracking accuracy $\leq 10\%$ of Beamwidth RMS
- Pointing accuracy $\leq 0.05^\circ$ RMS
- Total system results are antenna (mechanically) dependent
- CE, FCC Class A compliant, Reach
- Recommended for antenna beamwidths $>0.3^\circ$

ACU	Size	Weight	Power
2RU rack mount chassis with slides	3.5" H x 19" W x 20" D	10 lbs	Single phase, 110-240 VAC 350 VA
PDU			
AC Inverter	36" H x 30" W x 10" D (54" H Including Floor Stand)	100 - 150 lbs	Single Phase Electronics, 100-250 VAC 500 VA 208/380/415 VAC, 3 ϕ , KVA motor dependent Three Phase 200-240 Vac, 5 HP max Three Phase 380-480 Vac, 5 HP max
Environmental	Temperature	Humidity	
Operating-Indoor	0° to 50° C	90% Non-Condensing	
Operating-Outdoor	-20° to 50° C	100% Condensing	
Operating-Outdoor (optional extended)	-40° to 40° C	100% Condensing	
Storage	-10° to 70° C	100% Condensing	



Antenna Control Unit



The Antenna Control Unit (ACU) is the primary control and monitor interface point for the entire system, featuring a friendly touch screen windowed interface.

- Features
 - Easy touch screen operation
 - Informative display with color readouts
 - Extensive diagnostic monitoring and test capabilities
 - Supervisory Control Link
 - (Ethernet; TCP/IP or RS-232/422)
 - Fully software field upgradable

Internal Receiver

- 950 - 2150 GHz L-Band input
- 45 dB - Hz C/N
- -80 to -10 dBm input

Portable Maintenance Unit

The Portable Maintenance Unit (PMU) provides manually commanded, bi-directional control of all axes.

- Features
 - Hand held ruggedized unit with a pendant cable for convenient local operation at the antenna
 - Backup means of moving antenna and is ACU independent
 - Modes include position jog and Hi/Lo speed
 - Optional weather proof access junction boxes at convenient antenna locations



System Options

- Extended low temperature operation
- Extended Warranty
- PDU configurable for various motor sizes and polarization controls.
- E-Stops in panel mount or J-Box

Multi-Speed Inverter PDU

The Power Drive Unit (PDU) provides digital control to the AC drive motors. It also provides controlled acceleration and deceleration profile & speed regulation range of up to 15:1 with conventional inverter rated AC motor (antenna system dependant).

The inverter PDU's are free-standing, housed in an NEMA 4 (IP66 equivalent) aluminum enclosure and contains the electrical/mechanical components necessary to move the antenna. The PDU has an optional thermostat controlled, internal heater for cold weather operations.

A lockable handle secures the access door while the system is operating.

Transducers

- 1:1 Resolver (standard)
 - 0.0055° Resolution,
 - 0.05° Accuracy
 - Standard 16 bit

AC Motor Support

- Single or multiple inverter duty windings.
- Optional Handcrank interlock.
- 208-480v 3 phase windings available.
- Overtemp interlock.
- Up to 3 HP standard, larger upon request.

