SATCOM Technologies

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 upgradable 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 5º.

Pointing Accuracy

Normally better than 0.05° 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 5º inclined GEO targets

Operational Modes

- Enhanced Memory Track
- StepTrack
- Intelsat 11
- Preset
- Designate
- TableTrack
- Manual
- Computer
- Stop
- Simulator
- Polarization
- Stow

SPECIFICATIONS

| Tracking accuracy ≤ 10% of Beamwidth RMS |
| Pointing accuracy ≤ 0.05° RMS |
| Total system results are antenna (mechanically) dependent |
| CE, FCC Class A compliant, Reach |
| Recommended for antenna beamwidths >0.3° |

Model 930A Antenna Control System

Cost-Effective Inverter Drive Control

Precision Satellite Tracking and Control

Full Software Upgradeability

Ethernet Interface

ACU

<table>
<thead>
<tr>
<th>Size</th>
<th>Weight</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>2RU rack mount chassis with slides</td>
<td>10 lbs</td>
<td>Single phase, 110-240 VAC 360 VA</td>
</tr>
</tbody>
</table>

PDU

<table>
<thead>
<tr>
<th>Size</th>
<th>Weight</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Inverter</td>
<td>100 - 150 lbs</td>
<td>Single Phase Electronics, 100-250 VAC 500 VA 208/260/415 VAC, 3ø, KVAR motor dependent Three Phase 208-240 V, 5 HP max Three Phase 380-480 V, 5 HP max</td>
</tr>
</tbody>
</table>

Environmental

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating-Indoor</td>
<td>0° to 50° C</td>
</tr>
<tr>
<td>Operating-Outdoor</td>
<td>-20° to 50° C</td>
</tr>
<tr>
<td>Operating-Outdoor (optional extended)</td>
<td>-40° to 40° C</td>
</tr>
<tr>
<td>Storage</td>
<td>-10° to 70° C</td>
</tr>
</tbody>
</table>

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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

Model 930A Antenna Control System

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.

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