INTRAC™ 305 Antenna Control Unit

Antenna Tracking Controller Drop-in Replacement for Andrew™ APC300 Antennas

Features

- High performance, high reliability controller for full range of Andrew™ APC300 antennas up to 9.3 metres in diameter.
- Simultaneous Dual Axis drive
- INTRAC™ orbit modelling algorithm offers the highest tracking Integrity.
- Accurately tracks satellites with orbital inclinations up to and beyond 10°.
- Average tracking signal degradation less than 0.1dB.
- Accepts standard Andrew™ resolver transducers down to 10 arc seconds (17 bits).
- Interfaces directly to Andrew™ drive cabinets (simultaneous dual axis control).
- Compatible with INTELSAT and EUTELSAT SCPC tracking specifications.
- Tolerates signal fluctuations that defeat step track and memory track controllers.
- Resilient to tracking signal loss, maintaining integrity for up to 72 hours.
- Non-volatile memory ensures tracking is resumed after power failure.
- Full M&C control via RS232 / RS422 interface

Overview

The INTRAC™ 305 Antenna Control Unit enables satellite earth station antennas to accurately track geosynchronous satellites with orbital inclinations up to and beyond 10°. The unit offers superior tracking integrity with C- or Ku-Band antennas up to 9.3 meters in diameter. The control unit uses the INTRAC (INtelligent TRacking Antenna Control) algorithm which has been developed and refined over a >35 year period. It offers exceptional immunity to propagation disturbances and fades, maintaining reliable pointing accuracy even at low angles of elevation in regions of high scintillation.

The INTRAC™ 305 is compatible with INTELSAT and EUTELSAT SCPC tracking specifications. It is able to tolerate signal fluctuations that defeat step track and memory track controllers and is resilient to loss of tracking signal, the unit will maintain tracking integrity for blackout periods up to 72 hours. The non-volatile memory ensures that accurate tracking is resumed after power failure.

The unit is plug compatible with the, discontinued, Andrew™ APC300 controller and interfaces directly to existing Andrew drive cabinets and resolvers. It features full remote monitoring and control via a configurable RS232 / RS422 interface and supports a wide range of front panel selectable operating modes, including satellite acquisition and operation in program track mode using INTELSAT IESS-412 or NORAD data.

The INTRAC™ 305 features a large, multi-line electroluminescent display and can, as an option, be supplied with an internal L-Band beacon receiver (IBR-L).

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Specifications

Operational modes	Standby Manual (Jog) Search Remote Control Auto (INTRAC) Go To (Position Designate) Program Track IESS-412
Tracking Accuracy	Typically better than 0.1dB RMS signal degradation after tracking for 24 hours (with tracking signal), for orbit inclinations up to 10°
Prediction Accuracy	Typically better than 0.1dB RMS signal degradation over 72 hours (after loss of tracking signal), for orbit inclinations up to 10°
Backup	Model data is stored in EEPROM and the real time clock is supported by battery backup against power failure
Configuration Memory	Configuration data is stored in EEPROM
Tracking Signal	May be derived from the integral IBR-L beacon receiver or optionally from an external tracking receiver
External Tracking Signal	Voltage varying directly with received signal strength (in dB). Sensitivity 0.1V / dB to 1.0V / dB Offset + / - 10 volts max Lost Lock input, contact closure when tracking signal is lost.
Internal IBR-L	This option accepts an L-band signal, with an input level of -80 to -45dBm. The signal voltage and lock lost indicators are generated internally.
Display	Graphics LCD display giving the areas of information: Azimuth angle Signal strength Elevation angle Date & Time Polarization angle Alarms Mode of operation Operational menus Configuration menus
Limit Switches	Limit switch inputs for elevation, azimuth and polarization. Contacts normally closed
Polarization	Manual or automatic control of polarization axis motor, polarization angle displayed on screen.
Beacon Receiver	Eliminates the need for an external tracking receiver. Beacon frequency is selected over a range from 950 to 2150MHz from the INTRAC front panel.
Remote Control Terminal	Windows™ PC compatible software is available to provide a remote control terminal function. The terminal monitors and controls the INTRAC via the standard serial remote control port and provides facilities for managing and storing multiple orbit models. Alarm information is still available at the front panel.
Temperature Range	0 to 40ºC - Operating -25ºC to 85ºC - Non Operating (storage)
Humidity	5% to 95% RH non condensing - Operating 0% to 99% RH non condensing - Non Operating (storage)
Altitude	10,000 feet max
Input Power	110 or 230V, single phase, 50/60Hz, 50W
Dimensions	483mm (W) x 132mm (H) x 406mm (D).
Mounting	19" rack mounting unit, 3U high.
Weight	12 kg

Standards

Designed to Meet	EN55022 and EN50082-1 (Europe)
	FCC part 15, Subpart B Class A (USA)

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