Model 8861A is a compact controller for single speed positioning of 3-phase azimuth and elevation motors up to 1 hp, and 3-phase or single-phase feed motors up to 1/4 hp. With the controller installed at the antenna pedestal, you can use toggle switches on the 8861A to operate the unit directly, or use the 8860 Antenna Tracking Controller or an earth station control computer for remote control via an RS-422 serial link. A serial command set is available for custom monitor and control, enabling you to send move commands to the APC from an 8860 controller located up to 1000 meters away.

Azimuth and elevation resolution is 16 bits, with feed 1 and 2 axes resolution at 10 bits. The APC reads the azimuth and elevation position from brushless resolvers, and the feed 1 and 2 position by potentiometer. Digitizing transducer information at the antenna, rather than at the tracking controller, improves position measurement accuracy. The APC reports antenna position via the serial interface with a resolution of 0.0055°.

**PC-BASED CALIBRATION SOFTWARE**

Included with the unit is PC-based calibration software that performs site calibration of the controller to the antenna position transducers. The installer can calibrate the 8861A using a laptop computer connected to the RS-232 port of the APC, or from an earth station M&C via an RS-422 port. Programmable hardware and software limits prevent movement of the antenna beyond physical limits. The 8861A saves calibration data to non-volatile memory for automatic restoration after a power outage.

The 8860 Antenna Tracking Controller and a suitable receiver are required for satellite tracking.
Model 8861A Antenna Position Controller Specifications

MECHANICAL
Enclosure NEMA 4
Dimensions 508 x 508 x 203 mm (20H x 20W x 8D in.)
Weight 15.9 kg (35 lb.)

ENVIRONMENTAL
Temperature Range Operational -40° C to +55° C
Humidity 0 to 100% condensing

ELECTRICAL
Input Power 208 VAC, 50/60 Hz, (5 Wire -Y), 30A or 380-415 VAC, 50/60 Hz, (5 Wire -Y), 20A
Circuit Protection Thermal / Magnetic breaker
Communication Link RS-422 primary and RS-232 for calibration.

POSITION CONTROL
AZIMUTH AND ELEVATION CONTROL
Control Type 3-phase reversing contactors
Motor Type 3-phase AC induction, 1 hp or less
Motor Protection Thermal overload relay
Antenna Sizes Up to 11 meter
Limit Switches Dual contact, logic interlocked
Motor Control Simultaneous control of four axes (azimuth, elevation, Feed 1, and 2)

AZ / EL POSITION TRANSDUCER
Type Brushless resolver
Excitation 7,500 Hz, 4.4 Vrms, 4.2 mA
Converter Resolution 0.0055°
Axis Repeatability ±0.014° typical

MOTORIZED FEED CONTROL
Control Type Relays in reversing configuration
Motor Type Single 3-phase motor and/or Single 1-phase motor 1/4 HP or less
Motorized Feed Transducer Potentiometer
Converter Resolution 10 bit (0.18°)
Repeatability (0.35°)

OPERATOR CONTROLS & INDICATORS
Jog Control 4 Axes Momentary contact
Local / Remote Toggle switch
Indicators (LED) 4 Axes Movement (green)
Communication (green)
Fault (red)

MODES OF OPERATION
Local Front panel controls
Remote Via SAbus command set
Setup/Calibration Via RS-232 port using PC and calibration software

AUXILLIARY I/O
Auxiliary Inputs Two optically isolated inputs addressable via the SAbus
Auxiliary Outputs Controlled via the SAbus
Contact Closure Form C Rating: 1 A, 30 VDC maximum
Number of Outputs 2

NOTES
1 Optional low temperature cable kit for positioning below -10° C (14° F)

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