

# meSatrol v 1.0.1

Model No. 0926A

Data Sheet



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COSO ROBOTICS GROUP

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# meSatrol®

meSatrol® is the amalgamation of a mechanical positioning system of satellite dish antenna receiver and an electronic controller that has the capability of movement in two degrees of freedom i.e. elevation and azimuth. Prime requirement, as understood through discussions so far, is the precision in the movement in the mentioned planes along with alpha-numeric display of the angle in each plane i.e. elevation and azimuth.

The electronic controller controls the satellite dish antenna movement aided by the mechanical structure for dish antenna and motor/gear assembly to support the movement being controlled by the electronic controller.



- Accurate positioning in degrees (both elevation and azimuth)
- Five different speed levels to reach the required satellite angle
- Memory for 4 mostly used satellites degrees for automatic alignment from zero position
- Movement support of 0 – 90 degrees in elevation and 0- 350\* degrees in azimuth
- Lock feature to resist any misalignment due to wind
- Provision to reach any specified angle in elevation and azimuth directly by user input
- Robust feedback control to remove and compensate minute system level errors
- State of the art and easily upgradeable embedded system
- Built in fault analysis and operation logging system

- Strong mechanical structure with reduced play/deviations from desired position.
- Light weight design
- Provision of resistance to harsh weather conditions (Powder coated structure to stop erosion and other destructive conditions like rust)
- Water proofing of motor and bearing assembly to reduce maintenance cost
- Aesthetically elegant and optimized design

# Specifications

## MECHANICAL

Enclosure: eSatrol®  
Dimensions (WxHxD): 30 x 13 x 26 cm;  
Weight: 2.9 kg;

## ENVIRONMENTAL

Temperature Range:  
Operational -10° to +55° C  
(No direct exposure to sun during operation)  
Humidity: 0 to 40%

## ELECTRICAL

Input Power 220 VAC, 50/60 Hz  
Circuit Protection Thermal / Magnetic breaker  
System Communication Link: Custom  
Electrical Load Current Requirement: 60 Amperes

## POSITION CONTROL

Azimuth and Elevation Control  
Control Type: PWM Based  
Motor Type: 12 VDC Brushed Motor 2.42 Nm  
Motor Protection: Over Current Protection  
Limit Switches: Dual contact, logic interlocked  
Motor Control: Simultaneous control of two axes (azimuth, elevation)

## POSITION CONTROLLER

Type: Brushed Driver  
Excitation: 25 KHz  
Current: 25 A

## MOTORIZED CONTROL

Control Type: Digital speed control  
Motor Type: Brushed 12 VDC 2.4Nm

## OPERATOR CONTROLS/ INDICATORS

Alpha Numeric display (LCD)  
Num-pad for angle input  
Menu & Select Inputs for operation  
Arrow Keys

## MODES OF OPERATION

Manual control  
Automatic Control (angle input method)  
Setup/Calibration (Zero Calibration)



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