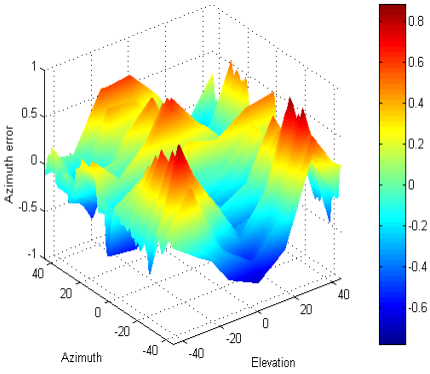
2-Axis Sun Sensor

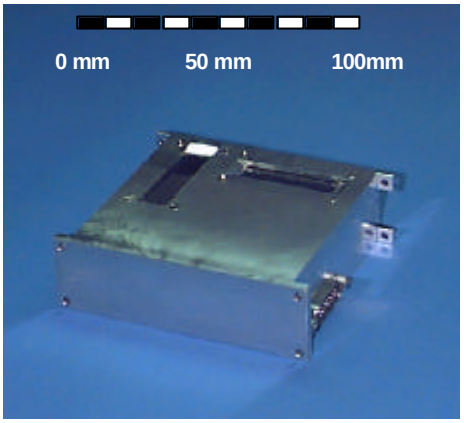
The SSTL 2-axis Sun sensor is a low-cost attitude determination sensor suitable for a wide range of space missions. The sensor measures the sun angle in two orthogonal axes.

The Sun sensor to measures the sun angle in both azimuth and elevation. A custom made solar cell detector and small slit is used for each measurement axis. The output from each axis consists of 3 analogue 0 - 5 Volt signals (A, B, C) which can easily be combined and linearised using a calibration polynomial function to obtain the relevant sun angles. The third analogue signal comes from a temperature sensor within the unit.

SSTL has been producing Sun sensors since UoSAT-3 and has accumulated over 63 orbit-years experience in the field. The latest evolution was flight qualified on FASAT-Bravo, launched in 1998.



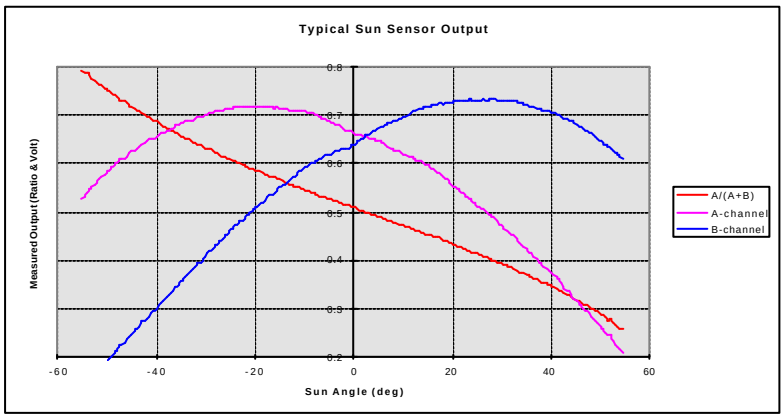
Errors in azimuth and elevation following calibration



Bare sun sensor unit, can be supplied with a variety of applied thermal surfaces

Sun Sensor Features

- **Low cost** parts and construction inherent to design
- **Low power, volume, mass** for easy integration on any platform
- **Testing and PA** plans available. Adaptable Environmental Testing, Acceptance Testing and PA plans



Other SSTL Products

- **ADCS equipment** including: star trackers; 3-axis quartz rate gyros; magnetometers; magnetorquers; reaction/momentum wheels.
- **Complete low cost small satellite solutions**, based on SSTL range of nano, micro, enhanced micro and mini satellites, including know-how transfer and rapid and affordable access to space
- **Sub-systems** (CD&H, Power, Communications, ODCS) and various **payloads**

affordable access to space

Specifications

- Sensors: 2 orthogonal axes
- Sensor Field of View: +/- 50 º
- Accuracy: 0.5º (3σ)
- Analogue output: 6 x 5 V channels

Environmental (Acceptance Level)

- Random Vibration: 15 g rms
- Operating Temp.: -50ºC to +80ºC
- Cumulative radiation dose: 20 kRad
- EMC: as per MIL-STD-462

Physical Characteristics

- Dimensions: 95x107x35 mm
- Mounting Interface: Flat
- 4 x M3 clearance holes
- Mass: 0.30 kg

Power Supply

- Power Consumption: Sunlit: <100 mW; Dark: <1 mW
- Power Supply: +/- 12 V

Contact

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SSTL-9004-02. 21-06-2000. This data sheet is for preliminary information purposes and can be changed without any notice. Please contact SSTL (see above) for further information.