

3-axis Fluxgate Magnetometer

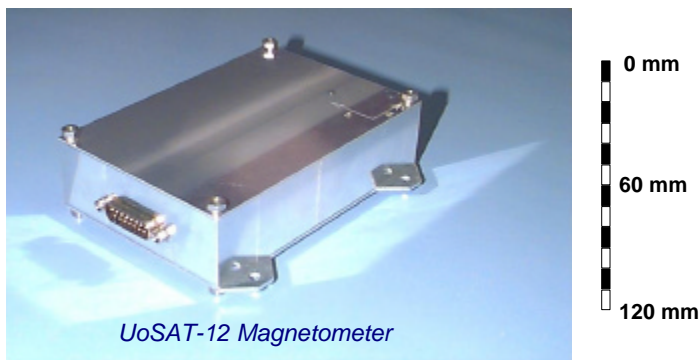


SSTL produces a 3-axis magnetometer suitable for wide range of missions in LEO. The magnetometer is housed in a compact unit and provides analogue readings on the magnetic field from three sensors in orthogonal axes. It has been qualified over numerous missions.

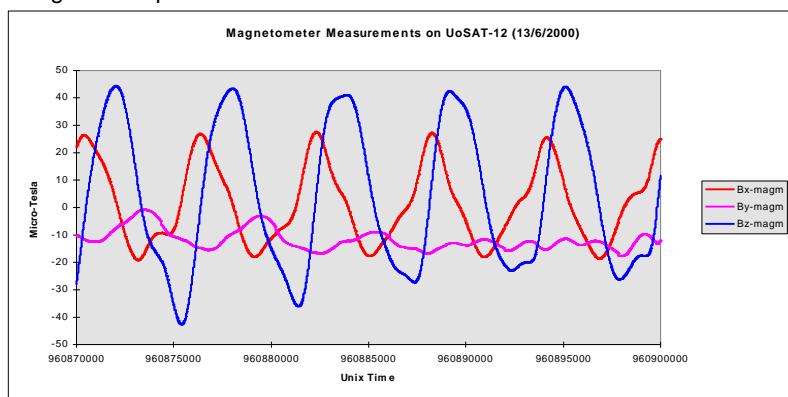
The magnetic field encountered by the satellite is measured by the 3-axis fluxgate magnetometer. The magnetometer returns data via three analogue (0 to 5 V) lines, one for each axis of measurement. Additionally, an analogue (0 to 5 V) temperature sensor provides case temperature for telemetry.

A total of 23 SSTL magnetometers are employed on 14 satellites in orbit with an accumulated 127 orbit-years of operation. The unit has a reliability figure of 0.984 for a three year LEO mission.

SSTL is developing a miniature version for existing missions, based on similar electronics. The unit's mass and dimensions will be in the region of 150g and 85 x 30 x 45 mm, with similar performance specifications to this existing unit.



- **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



Typical magnetometer output data for spacecraft x, y and z axes

Other SSTL Products

- **ADCS equipment** including: sun sensors, star trackers; 3-axis quartz rate gyros; magnetometers; magnetorquers; reaction/momentum wheels.
- **Sub-systems** (CD&H, Power, Communications ODCS) and various **payloads**
- **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

affordable access to space

Applications

- Spacecraft in LEO

Specifications

- Sensitivity: -10 to +10 nT
- Range: -60 to +60 μ T
- Update Rate: 10 Hz maximum

Environmental

- Random Vibration: 15 g rms
- Operating Temp: -50 to +80 $^{\circ}$ C
- Cumulative radiation dose: 20 kRad
- EMC: as per MIL-STD-462

Physical Characteristics

- Dimensions: 130 x 90 x 36 mm
- Mass: 295 g
- Finish: none (options available e.g. Alocrome, black)

Power Supply

- Power supply:
8 mA @ -10.5 V
and
14 mA @ +10.5 V

Contact



Surrey Space Centre
University of Surrey
Guildford, Surrey GU2 7XH
United Kingdom

Tel: +44 (0)1483 879278
Fax: +44 (0)1483 879503
E-mail: info@sstl.co.uk
www: www.sstl.co.uk

Issue Number & Notice

SSTL-9013-01. 13-06-2000. This data sheet is for preliminary information purposes and can be changed without any notice. Please contact SSTL (see above) for further information.