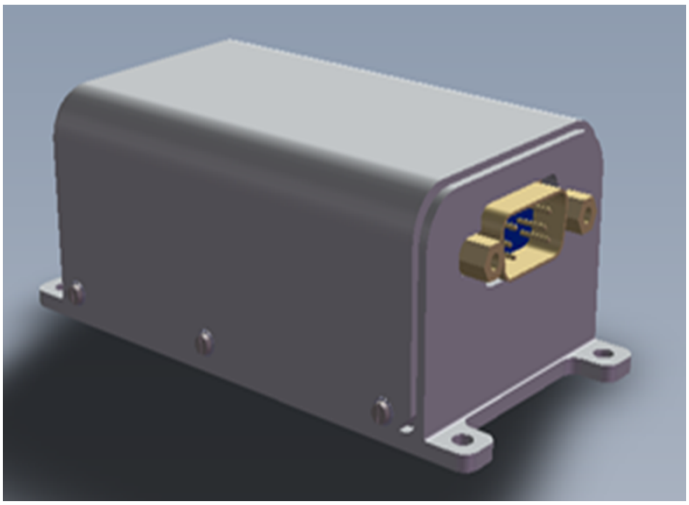
# Magnetometer

## Applications

- Attitude Determination Systems
- Safe-Mode Systems
- LEO Missions
- Earth Observation Missions
- Space Science Missions



### Features

- Three-axis fluxgate magnetometer
- Reliable attitude sensing
- Low mass and power
- Temperature sensor
- 7 year design life

### Interfaces

- Analog inputs/outputs
- D-type DC connector

### Heritage

- 70 magnetometers flown on over 30 missions

### Options

- Various surface finishes available
- Custom design available
- Digital interface unit

### Other Surrey AOCS Products

- Reaction wheels
- Star trackers
- Sun sensors
- Magnetometer MTR-30 (dual coil)
- Magnetorquer MTR-30s (single coil)
- Magnetorquer MTR-5

| | |
|---|---|
| Sensitivity | ± 10 nT |
| Range | ± 60 uT |
| Bandwidth | 10 Hz |
| Temperature Channel | 1x 5 V Analog |
| Field Measurement | 3x 5 V Analog |
| Mass | 140 g |
| Dimensions | 99 x 35 x 51.72 mm |
| Power Supply | Supply ± 12 V<br>Consumption <300 mW |
| Temperature | -20 to +50ºC operating<br>-40 to +80ºC non-operating |
| Random Vibration | 15 $G_{rms}$ in all axis |
| Radiation Tolerance | 10 kRad (Si) |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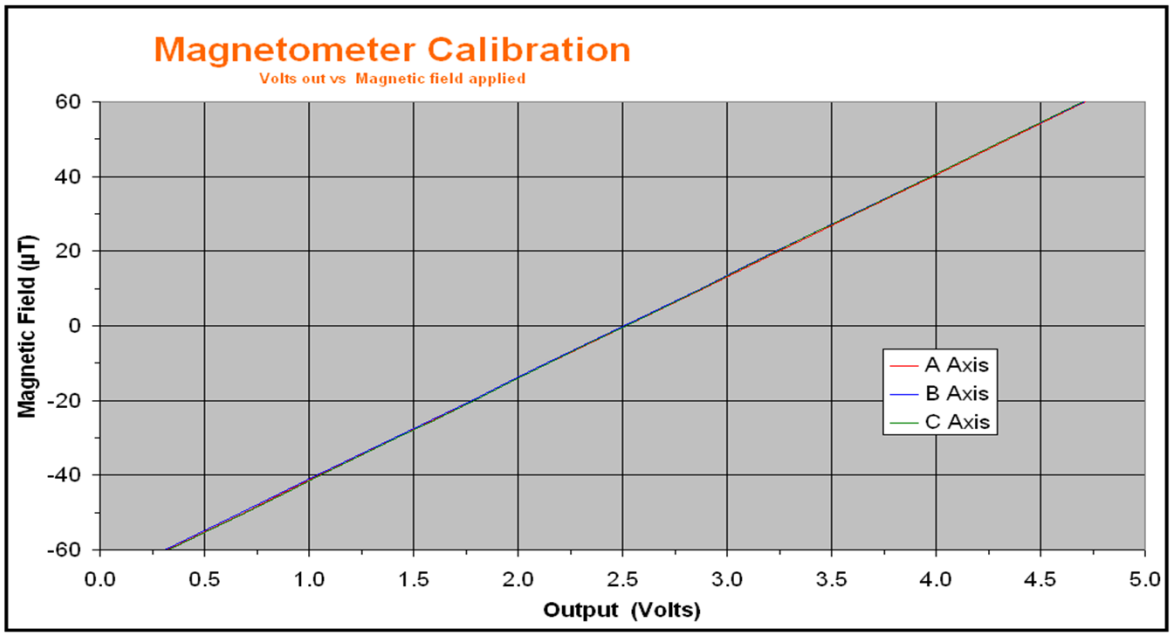


The magnetometer is suitable for use as part of a coarse attitude determination system on LEO missions. The 3-axis fluxgate magnetometer measures the magnetic field and provides readings from 3 sensors arranged in orthogonal axes. It can be used in combination with a satellite position fix and International Geomagnetic Reference Field (IGRF) model to determine satellite attitude. In addition, an analog temperature sensor provides case-temperature telemetry.

**Surrey is ISO9001:2008 certified**

Subsystems are manufactured to:

- ECSS Q-ST-70-08C
- ECSS Q-ST-70-38C
- All work overseen by ESA-trained assembly staff

Standard delivery service includes:

- Compliance testing
- Vibration test
- Thermal cycling
- User manual
- Test results
- Export license and shipping
- Thermal vacuum testing available
- Unit can be supplied prior to environmental testing

## Surrey Satellite Technology

Surrey Satellite Technology (SST) has launched 34 satellites gaining almost 200 years in-orbit experience. SST draws on its world-class expertise in both small satellite platform technology and high and medium resolution imagers. SST provides complete turnkey system solutions: spacecraft, ground station, launch, operations, and image data processing.

SST is unique in the space industry—able to design, manufacture, and integrate multiple satellites in-house in its three specifically designed facilities in the United Kingdom, with this capability soon to be replicated in the U.S.A.

*Changing the economics of space*

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