

# Calibration Certificate

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The following measurements were carried out using working standards which are periodically verified, and are traceable to National Physical Laboratory Standards.

## Calibration References

|   |       |                |
|---|-------|----------------|
| Bartington <i>Mag-01</i> Magnetometer   | TE112 | Serial No 0288 |
| Bartington <i>Mag</i> Probe B           | TE113 | Serial No 501  |
| Bartington Solenoid with Current Source | TE18  | Serial No 001  |

## Three axis magnetic field sensor under test

*Mag-03* MSES Range 70µT Serial No 1146

## Test Results

| PARAMETER                                   | SPECIFIED  |                       | RESULTS |       |      |
|---|--|-----------------------|---------|-------|------|
|   |  |                       | X       | Y     | Z    |
| Orthogonality Error<br>TR0076 Test 9        | MS and MSES versions $\pm 0.1^\circ$<br>All other versions $\pm 0.5^\circ$ |                       | ✓       | ✓     | ✓    |
| Offset Error in Zero Field<br>TR0076 Test 8 | <b>Range</b><br>(µT)   | <b>Offset</b><br>(nT) |         |       |      |
|   | 70   | ±5                    | ✓       | ✓     | ✓    |
|   | 100  | ±5                    |         |       |      |
|   | 250  | ±12                   |         |       |      |
|   | 500  | ±25                   |         |       |      |
|   | 1000   | ±50                   |         |       |      |
| Scaling Error*<br>TR0076 Test 5b            | ± 0.5 %  |                       | 0.2%    | 0%    | 0%   |
| Frequency Response**<br>TR0076 Test 6a      | ± 5 %  |                       | -0.8%   | -2.2% | 0.6% |
| Noise at 1 Hz<br>TR0076 Test 10a            | Standard - 12 pTrms/√Hz ✓<br>Low noise - 6 pTrms/√Hz                       |                       | 6.1     | 4.0   | 5.5  |

\* Measured at 35 Hz using a field of 100 µT pk-pk.

\*\* The response at 1 kHz referred to that at 35 Hz.

The measurement uncertainty for the above values is ± 1 LSD

The calibration was measured at 20 (± 2) °C

Certified that the above instrument has been fully tested and calibrated to the manufacturers published specifications, due allowance having been made for the uncertainty of the measurements.

NAME G. McLACHLAN Date 24/5/01

Signature Graeme McLachlan