

# MICROTESLA

MAGNETIC FIELD EFFECTS

## MAS: MicroTesla Analog Sensor

The MicroTesla Analog Sensor provides a basic analog directional sensor. Magnetometer and accelerometer electronics are mounted on a short, rigid one-piece chassis.

### Physical

- Length: Min 19"
- Diameter: 1.37"
- Proprietary MFE fluxgate magnetometer
- Quartz flexure accelerometers
- RTV encapsulation of boards

### Electrical

- Through-hole boards with RTV encapsulation
- Voltage requirement:  $\pm 12$  to  $\pm 15$ V
- Power usage nominal: 0.6W

### Environmental

- All boards qualified for high-temp applications, 175°C\*
- Q-Flex accelerometers, 175°C
- Magnetometers, 200°C

\* Note: 150°C accelerometers can be used at the customer's request.



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### Mechanical and Environmental Specifications

| Parameter  | Minimum | Maximum  | Units                 |
|--|---------|----------|-----------------------|
| Outside Diameter*                                |         | 1.37     | inches                |
|  |         | 3.5      | cm                    |
| Length*  |         | 19.0     | inches                |
|  |         | 38.1     | cm                    |
| Operating Temperature                            | 0       | 150, 175 | °C                    |
|  | + 32    | 302, 347 | °F                    |
| Survival Temperature                             | - 40    | 160, 185 | °C                    |
|  | - 40    | 320, 365 | °F                    |
| Vibration, Random<br>(Limited to accelerometers) |         | 20       | g RMS, 15-500 Hz      |
| Shock<br>(Limited to accelerometers)             |         | 1000     | g .05 mSec, half-sine |

\* Dimensions do not include running gear, centralizers, or axial shock absorbers.

### Instrument Accuracy Specifications

| Parameter                                       | Minimum | Units   |
|---|---------|---------|
| Inclination accuracy, absolute*                 | ± 0.10  | degrees |
| Inclination spread on axial rotation at 90° Inc | < 0.20  | degrees |
| Azimuth accuracy, absolute, 90° Inc             | ± 0.5   | degrees |
| Azimuth spread axial rotation, 10° through 90°  | < 1.0   | degrees |
| Total face accuracy, axial rotation at 90° Inc  | ± 1.0   | degrees |
| Total g field accuracy                          | ± 3.0   | mG      |
| Total H field accuracy, absolute                | ± 300   | nT      |

\* Absolute accuracy is achieved when the instrument is tested in a controlled environment using a calibrated and certified reference position.

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