

General Description

The MicroTesla Digitized Module incorporates recent product design improvements into a surfacemount board design. This product integrates the A-to-D conversions with a dedicated Microprocessor. This product has a robust power supply and incorporates the Ulti-Pak board-mounting method. The MDM uses the MFE universal chassis.

Physical

- Length: 21.75"
- Diameter: 1.37"
- Compatible with gamma modules
- Proprietary MFE fluxgate magnetometer
- Quartz flexure accelerometers
- Universal chassis, all boards fully covered

Electrical

- Surfacemount electronics packaging with Ulti-Pak board mounting
- Operating voltage range: 12V to 36V
- Power usage: 1.7W peak, 0.6W idle
- Digital interfaces: serial RS-232, serial logic level or SPI
- Dedicated microprocessor and power supply built-in
- Calibration coefficients downloaded directly into module memory
- Sensor power management through firmware

Environmental

- All boards qualified for high-temp applications, 175°C
- Q-Flex accelerometers, 175°C
- Magnetometers, 175°C
- Ulti-Pak board mounting for improved shock and vibration isolation



Mechanical and Environmental Specifications

| Parameter | Minimum | Maximum | Units |
|---|------------|--------------|------------------------|
| Outside Diameter* | | 1.37 | inches cm |
| Length* | 21.75 | 29** 71.1 | inches cm |
| Operating Temperature | 0 +32 | 175 347 | °C °F |
| Survival Temperature | -40 -40 | 185 365 | °C °F |
| Vibration, Random (Limited by accelerometers) | | 20 | g RMS, 15-500 Hz |
| Shock (Limited by accelerometers) | | 1000 | g, 0.5 mSec, half-sine |
| *Dimensions do not include running gear, centralizers, or axial shock absorbers | | | |
| **Customer adapters add length | | | |

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, 10° through 90° | ±0.50 | degrees |
| Azimuth spread axial rotation, 10° through 90° Inc | <1.0 | degrees |
| Tool face accuracy, axial rotation 10° through 90° Inc | ±1.0 | degrees |
| Total g field accuracy | ±3.0 | mG |
| Total H field accuracy, absolute | ±3.0 | nT |
| RPM Measurement, 2 - 200 RPM | ±2.0 | % of value |
| * Absolute accuracy is achieved when the instrument is tested in a controlled environment using a calibrated and certified reference position | | |

