

General Description

The MicroTesla Digitized Module with Expansion Slot is specifically designed for MWD applications. It combines MicroTesla's newest MDM instrument with customer-provided MWD controller boards. The MDME uses the universal chassis.

Physical

- MDM directional sensor and customer MWD controller board in the same chassis
- Length: 21.75"
- Diameter: 1.37"
- Compatible with gamma modules
- Proprietary MFE fluxgate magnetometer
- Quartz flexure
- Universal chassis, all boards fully covered

Electrical

- Surfacemount electronics packaging with Ulti-Pak mounting
- Operating voltage range: 12V to 36V
- Estimated power usage: 3.0W peak, 0.6W idle*
- Digital interfaces: serial RS-232, serial logic level or SPI
- Dedicated microprocessor and power supply built in
- Calibration coefficient downloaded directly into module memory
- Sensor power management through firmware
- (11) Pass through wires available
- 0.5W available for expansion board (+5V and 100 MA max)

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

*Subject to testing of expansion board and its power consumption.



Mechanical and Environmental Specifications

Parameter	Minimum	Maximum	Units
Outside Diameter*		1.37	inches cm
Length*	21.75	29.0** 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
**Custom 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, 90° Inc	±0.5	degrees
Azimuth spread axial rotation, 10° through 90°	<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

