

MDS175T: MicroTesla Digitized Sensor

The MicroTesla Digitized Sensor provides a basic, digitized directional measurement. All (4) boards have been revised to improve the sensor reliability. The sensor is designed for direct connection to a micro-processor-based data acquisition system via dedicated serial interface connections. A variety of chassis end connections are available to meet customer specific requirements.

Physical

- Length: Min 24", Max 29.0" nominal
- Diameter: 1.37"
- Proprietary MFE fluxgate magnetometer
- Quartz flexure accelerometer
- Compatible with the existing QDT system

Electrical

- Through-hole boards with RTV encapsulation
- Operating voltage range: $\pm 12V$ to $\pm 15V$
- Power usage nominal: 1.2W peak
- Digital interfaces: serial RS-232, serial logic level or SPI
- Calibration coefficient downloaded directly into digital interface serial memory
- Switching circuitry provides sensor power control

Environmental

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



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Mechanical and Environmental Specifications

Parameter	Minimum	Maximum	Units
Outside Diameter*		1.37	inches
		3.5	cm
Length*	24	29.0	inches
	61	73.6	cm
Operating Temperature	0	150, 175	°C
	+ 32	302, 347	°F
Survival Temperature	- 40	160, 185	°C
	- 40	320, 365	°F
Vibration, Random (Limited to accelerometers)		20	g RMS, 15-500 Hz
Shock (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
Tool face accuracy, axial rotation 10° through 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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