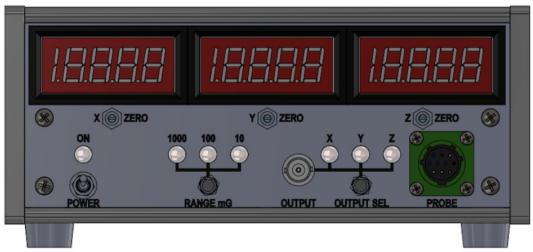
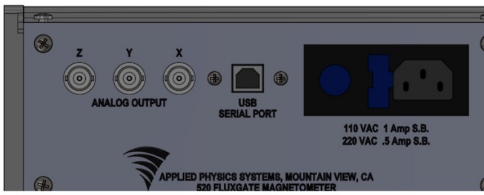
MODEL 520/520C
MAGNETOMETER SYSTEM

FEATURES

- Simultaneous measurement of magnetic fields along three orthogonal axes
- Low noise level of 0.3 nT/Hz (3x10-6 G/Hz)
- Small three axis probe allowing use in restricted spaces
- Three simultaneous LCD displays with a resolution of 10^{-6} Gauss (0.1 gamma)
- Three selectable full-scale ranges: 1000 mG, 100 mG, 10 mG
- Digital output via USB connection
- Low drift - less than 10^{-5} G/°C



FRONT VIEW



APPLICATIONS

- Laboratory Instrumentation
- Compassing and Navigation
- Attitude Reference
- Anomaly Detection

The Applied Physics Systems Model 520 fluxgate magnetometer measures the field simultaneously along three orthogonal directions and is displayed on three front-panel 3-1/2 digit liquid crystal displays.

The Model 520 Fluxgate System can be employed to measure time variances as well as static fields. The system frequency response is flat from DC to 500 Hz, enabling measurement of power line generated fields, biologically generated fields and other small, time-varying fields.

The Model 520 and 520C Fluxgate Systems consist of a magnetic field measuring probe connected by a 15-foot interconnect cable to a power supply and electronic readout console. The small probe size enables magnetic measurements to be made in restricted spaces.

Model 520C Offset Capability

In addition to the features of the Model 520, the 520C adds precision 3-axis offset capability. This capability enables the nulling out of steady fields on all axes up to 10-4 T (1000 mG) with no degradation in the instrument drift or noise level. This feature is essential when measuring small field changes in the presence of a large static field. This application can be used, for example, to test materials for small magnetic impurities or measure small changes in the Geomagnetic field.

APPLIED PHYSICS
DEFENSE

HEADQUARTERS
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ELECTRICAL

AC power Requirements	115V or 220V
Fuse	See rear of instrument for specific fuse type
Current Consumption	115V: 1.0 Amp 220V: 0.5 Amp
Digital Output	One packet per second

ENVIRONMENTAL

Operating Temperature Range	0°C to +70°C

PERFORMANCE

Sensitivity Range (full scale)	Sensitivity at output BNCs
1000 mG	10 V/G (0.1 V/ µT)
100 mG	100 V/G (1 V/ µT)
10 mG	1V/mG (10 V/ µT)
Noise Level	0.3 nT/Hz (3x10-6 G/Hz) @ 5 Hz
Linearity @ full-scale @ ± $1x10^5$ ntesla (± 1 Gauss)	na < 0.1%
Frequency Response	DC to 500 Hz (-3 db)
Initial Bias at 25°C	
Drift in Zero with Zero Temperature	< 1nT/°C (10-5 G/°C)
Drift in Full Scale Output with Temperature	<0.01%/°C
Orthogonality between axis	±0.2°
Alignment of sensor package with sensor reference surfaces	±0.2°
Offset Capability Selectable (Model 520C only)	
Low Range	0 to ±1 mG
High Range	0 to ±1200 mG

PHYSICAL

Probe Size (WxHxL)	1”x 1” x 3” (25 x 25 x 76 mm)
Probe Weight (Shielded Enclosure)	4 oz (113 g)
Model 520 Console Size (WxHxL)	8½” x 4” x 15” (216 x 102 x 381 mm)
Model 520 Console Weight	7 lbs (3 kg)
Model 520C-Console Size (WxHxL)	8½” x 6” x 15” (216 x 152 x 381 mm)
Model 520C Console Weight	9 lbs (4 kg)
Cable	15’ (4.7 m) length Shielded 8-conductor
Cable Connectors	Bendix PT06 style

Specifications are subject to change without notice.