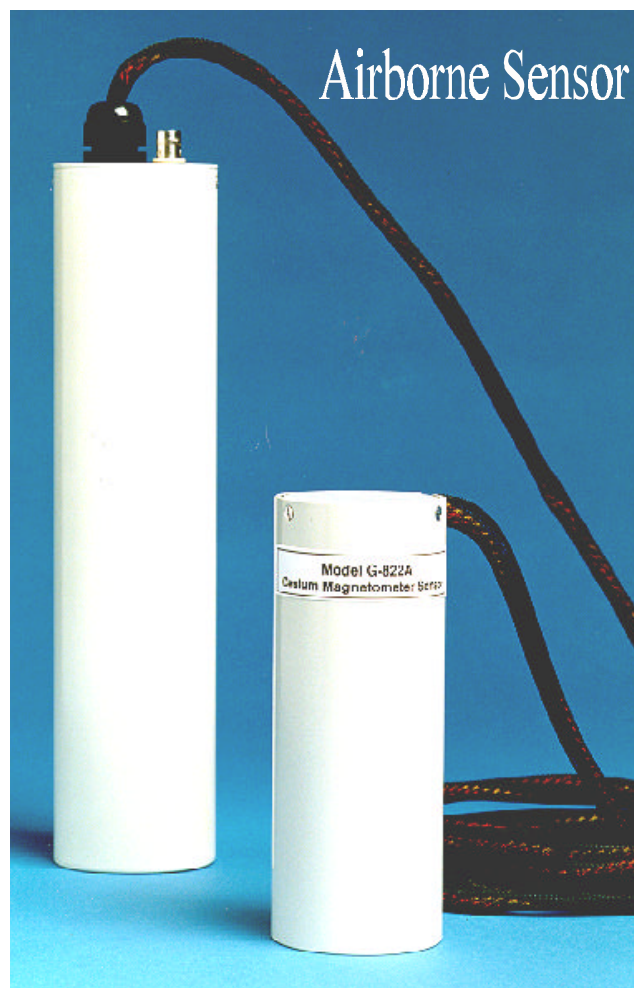




## G-822A CESIUM MAGNETOMETER

- **Airborne and Vehicle Applications with Multi-Sensor Array Capability**
- **Automatic Hemisphere Switching**
- **Highest Sensitivity — 0.0005 nT/Hz RMS with the G-822A Super-Counter**
- **Highest Versatility — Full Aircraft Compensation with RMS AADCII or Button-on Towed Bird system with CM-201 Internal Mini-Counter, with 6 Channel 12 bit A to D converters**
- **Superior resolution of the Cesium Larmor signal, tracking earth's field variation rates exceeding thousands of nT ( $\dot{a}$ ) over 0.01 second periods when using the G-822A Super-Counter**
- **Gradiometer arrays offering simultaneous operation of up to four separate sensors with the RMS Instruments AADCII, Geometrics' G-822A Super-Counter or CM-201 Internal Mini-counter (See 823A Data Sheet)**
- **Geometrics offers complete turnkey systems including Birds, Stingers, Wingtip installation accessories as well as Digital Data Acquisition Systems, Flight Path Recovery, GPS Navigation, Gamma Ray Spectrometers, VLF EM, Post Acquisition Data Processing Software and Training**



The G-822A is designed for all airborne or mobile applications where the unique combination of high sensitivity and very rapid sampling of the earth's magnetic field are required. Applications include mapping geologic structure for mining, oil and gas exploration, and the detection and delineation of target bodies in environmental or military type surveys. The unit consists of a high performance low heading error cesium vapor sensor with its associated cables and driver electronics package.

The G-822A sensor uses a precise well-proven design, carefully selected and tested components to insure the very best specifications in sensitivity, noise, heading error and absolute accuracy. A proven record of stable and reliable operation over long periods is the hallmark of the industry standard G-822A. A single coaxial cable of up to 50 meters length supplies both 28 VDC power and Larmor signal transmission from the sensor driver electronics to the 822A Super-Counter or the RMS

Instruments' AADCII Automatic Aeromagnetic Digital Compensator. Internal or external signal/power filter-decoupler assemblies are available to provide extremely low noise operation.

The interconnect cable from the driver/electronics to the sensor may be supplied in lengths of 82 and 136 inches. Tuning throughout the earth's field range is fully automatic, and includes automatic hemisphere switching for equatorial surveys.

The sensor/electronics package is watertight, temperature controlled, and delivers full performance under extreme operating conditions. Accessories include special mounting clamps and orientation platforms for installation into a variety of vehicle or aircraft mounting configurations, as well as Birds, Stingers and Wing Tip fairings.

## **MODEL G-822A AIRBORNE CESIUM MAGNETOMETER SENSOR SPECIFICATIONS**

<b>OPERATING PRINCIPLE:</b>	Self-oscillating split-beam Cesium Vapor (non-radioactive)
<b>OPERATING RANGE:</b>	20,000 to 100,000 nT
<b>OPERATING ZONES:</b>	The earth's field vector should be at an angle greater than 6 from the sensor's equator and greater than 6° away from the sensor's long axis. Automatic hemisphere switching.
<b>SENSITIVITY:</b>	<0.0005 nT/√Hz rms. Typically 0.003 nT P-P at a 0.1 second sample rate (90% of all readings falling within the P-P envelope) using 822A Supercounter, 0.02nT P-P for CM-201
<b>HEADING ERROR:</b>	±0.25 nT (over entire 360° spin and tumble)
<b>ABSOLUTE ACCURACY:</b>	<3 nT throughout range
<b>OUTPUT:</b>	Cycle of Larmor frequency = 3.498572 Hz/nT, 2V P-P coupled through the sensor power input
<b>MECHANICAL:</b>	
Sensor:	2.375" (60.32 mm) dia., 6.25" (158.75 mm) long, 12 oz (339 g) - any orientation in 7" dia. stinger
Sensor Electronics:	2.5" (63.5 mm) dia., 11" (279.4 mm) long, 22 oz (623 g)
Cables:	
Sensor to electronics:	70" (1.78 m) or additional 40" (1.1 m) increments with quick disconnect on electronic end. Longer lengths available - Up to 19.5 ft (6.1m)
Sensor Electronics to Counter:	Up to 220 ft (70 m)
<b>OPERATING TEMPERATURE:</b>	-30°F to +122°F (-35°C to +50°C)
<b>STORAGE TEMPERATURE:</b>	-48°F to +158°F (-45°C to +70°C)
<b>ALTITUDE:</b>	Up to 30,000 ft (9,000 m)
<b>WATER TIGHT:</b>	Sealed for up to 2 ft (0.9 m) depth
<b>POWER:</b>	24 to 32 VDC, 0.75 amp at turn-on and 0.5 amp thereafter
<b>ACCESSORIES:</b>	
Standard:	Power/Larmor coaxial cable (electronics to counter), lengths to be specified, spare O rings, operation manual and carrying case
Optional:	
Signal/Power Decoupler:	Separates the Larmor signal from the power (28 V) to enable connection to RMS Instruments' AADCII Automatic Aeromagnetic Compensator or Customer supplied counter
Internal Decoupler:	P/N 27504 - up to two sensor installation
External Decoupler:	P/N 27560 - three and four sensor installation
Internal CM-201 Counter	See G-823 A Data Sheet
Stinger, Wingtip, Bird	Contact Factory for complete system integration information
Base Station Accessories	Non-magnetic Tripod, clamps cables

**SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE**

**1/98**

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