Optically pumped Potassium Airborne Magnetometers (GSMP-35A) are the most precise airborne magnetometers with sensitivity of .0002 nT and heading error of ± 0.05 nT. Installations can be for fixed wing platforms and towed birds (TriaxBIRD and GradBIRD shown).

The Potassium Airborne Magnetometer (GSMP-35A) is based on the unique optically pumped Potassium sensor - a technology that offers an order of magnitude increase in resolution over other systems. It also provides:

• Reduced "heading" errors
• Highest absolute accuracy
• Decreased maintenance costs

These advantages plus GEM Systems reputation as a proven supplier of advanced and reliable Magnetometer technology since 1980 make the GSMP-35A a key solution for any airborne application.

The worldwide application of airborne magnetic and gradiometric data is extensive. Ensure your data is collected with the highest Sensitivity Magnetometer.

• Map targets, geology and geologic structure in mineral exploration
• Perform frontier evaluation, augment seismic data in hydrocarbon exploration
• Detect Unexploded Ordnance (UXO)
• Map pipelines and other cultural objects in environmental and engineering investigations

GEM Systems introduced the Potassium Vapour Magnetometer to the industry in the late 1990's. This magnetometer exceeds all other magnetometers for heading error, absolute accuracy and precision.

GEM Systems large potassium sensors offer the highest sensitivity (20-50 ft) for use in natural hazard research and global ionospheric studies.

Our Leadership and Success in the World of Magnetics is your key to success in applications from Archeology, Volcanology and UXO detection to Exploration and Magnetic Observations Globally.
The system provides a lightweight, high precision solution for a variety of applications. White Eagle multiple gradient helicopter system is shown on right with 10 Potassium sensors.

**GSMP-35A Key Components**

The GSMP-35A technology comprises:
- Sensor head
- Radio Frequency (RF) pre-amplifier and drive electronics module
- Cable (1 to 10m - standard 5m) to separate sensor and electronics for noise elimination
- Optional signal processor / console and cable

The sensor deploys as a single unit, or in combination with other sensors for magnetic gradient measurements.

In the example below, the sensor is deployed in a multi-sensor configuration for gradient and total field magnetic measurements. Here, three Potassium units are installed in a “Triaxial bird” for measuring multiple gradients.

**Implementing Your Solution**

The GSMP-35A system can be interfaced to GEM's signal processing console, which provides memory for over 2.5 million readings or to other data recorders.

GEM's technicians can provide set-up and interfacing help, such as:
- Installation assistance for “fixed-wing” or “stinger” configurations
- Custom “bird” design and development for “towed” configurations
- Conversion of output voltages into corresponding frequency and magnetic field values
- Electronics interfacing to on-board recording and navigation systems

**Magnetometer Specifications**

**Performance**
- Sensitivity: 0.0002 nT @ 1 Hz
  *(optional 0.0001 nT @ 1 Hz GSMP-30A)*
- Resolution: 0.0001 nT
- Absolute Accuracy: ± 0.1 nT
- Dynamic Range: 20,000 to 120,000 nT
- Low/High Field Options: 3000 to 350,000 nT
- Gradient Tolerance: 50,000 nT/m
- Sampling Rate: 1, 5, 10, 20 Hz

**Orientation**
- Sensor Angle: optimum angle 35° between sensor head axis & field vector.
- Orientation: 10° to 80° & 100° to 170°
- Heading Error: ± 0.05 nT between 10° to 80° and 360° full rotation about axis.

**Environmental**
- Operating Temperature: -40°C to +55°C
- Storage Temperature: -70°C to +55°C
- Humidity: 0 to 100%, splashproof

**Dimensions & Weights**
- Sensor: 141mm x 64mm (external dia.); 1.3 kg
- Electronics Box: 229mm x 56mm x 39mm; 0.63 kg

**Power**
- Power Supply: 22 to 32 V DC
- Power Requirements: approx. 50 W at start up, dropping to 12 W after warm-up
- Power Consumption: 12 W typical at 20°C
- Warm-up Time: <10 minutes at 20°C

**Outputs**
- 20 Hz RS-232 output with comprehensive Windows Personal Computer (PC) software for data acquisition and display.
- Outputs UTC time, magnetic field, lock indication, heater, field reversal, position (latitude, longitude or UTM), GPS altitude, number of satellites and differential GPS

**Components**
- Sensor, pre-amplifier box, 5m sensor / pre-amplifier cable, manual & ship case.

All components are backed by GEM's industry leading three-year warranty.