

QuantumMag



QuantumMag areas of application:

- Mineral explorations
- Archaeological studies
- UXO detection
- Environmental and geotechnical surveys
- Geological mapping
- Oil and gas
- Magnetic observatory measurements

QuantumMag is one of the most advanced and light-weight versions of high-precision cesium vapour magnetometers on the market. The system allows one to measure the Earth's total magnetic field with highest accuracy and rate. The device can be used as a rover hand-held magnetometer or autonomous base station. Data can be either stored in the built-in memory or transferred to a remote

PC in real-time. The implementation of noise-free sampling algorithms enables the fulfilment of magnetometry surveys in the areas characterized by high level of industrial noises. Automatic coordinate determination of measurement stations as well as time synchronization between a rover magnetometer and a base station are provided by the built-in GLONASS / GPS receiver.

QuantumMag can be used as a deep metal detector and utility locator due to its high measurement rate and graphic data presentation through the built-in console display. This makes it perfectly suitable for the unexploited ordnance (UXO) detection and geotechnical studies.

The unit can be fixed either at the backpack harness (conventional magnetometry surveys) or at the shoulder belt (e.g. for UXO and utility detection) depending on the selected measurement technique.

QuantumMag is included into the official list of measurement systems of Russian Federation (No. 77289-20). Each magnetometer has its own Certificate issued by authorized organization based on the testing in the certified magnetic induction measure.

Distinctive features of the new generation of QuantumMag magnetometers:

- Extended operating range from 15 000 to 110 000 nT
- Real-time data transfer to a remote PC
- New rugged and waterproof construction of the console and sensor case
- Besides the shoulder belt, the sensor can be installed at the new ergonomic backpack harness for even more comfortable usage
- New safe Li-ion battery – extends the operation temperature range (-40 ÷ +85°C)
- Portable folding sensor rode (available as an option) – comfortable for air travels (fits general carry-on limits)
- Built-in GLONASS / GPS module
- Communication with PC via USB interface; console is powered by USB
- Additional built-in memory with the software for data downloading, processing and visualization
- New rugged container for shipping / storage
- Cables of new design with reinforced connectors
- MS Windows based SDK API – intended for real-time data transfer is available on request

The magnetometer provides:

- Automatic change of line and station numbers as well as their coordinate grid
 - Precise measurements with 0.1 s rate
 - Autonomous base station can transfer the measured data to a remote PC in the real-time mode
-

- Both text and graphic data presentation via built-in display
- Test mode with RMS and medium value estimation (without data storage)
- Data export to ASCII text file

Package contents:

- Magnetometer QuantumMag
- Console
- Communication cable console-magnetometer
- Remote start module
- USB cable
- Li-ion battery with cable
- Charger
- Power cable
- Backpack harness
- Shoulder belt
- Rugged case
- Data storage software
- Calibration certificate issued by authorized organization
- Operation manual

Magnetometry survey forward modelling and data inversion may be successfully carried out with advanced ZondGM2d and ZondGM3d software packages.

Range	15 000 ÷ 110 000 nT
Sensitivity	0.002 nT/ $\sqrt{\text{Hz}}$
Resolution	0.001 nT
Optimum sensor angle	45° between sensor head axis & field vector
Proper orientation	$\pm 30^\circ$
Heading error	up to 1.5 nT
Gradient tolerance	up to 20 000 nT/m
Max sample rate	10 Hz
Memory capacity, measurements	1 000 000 (in base magnetic station mode), 250 000 (with coordinate referencing)
Communication interface with PC	USB
Power	10 ÷ 16.8 V, Li-ion or Pb battery
Operating time with one regular battery	12 h
Operating temperature	-40 ÷ +50 °C
Weight of working set	3.4 kg







