

Proton Precession Magnetometer AM502

For precise measurement of the geomagnetic field



Features

- Scalar magnetometer with low noise and high accuracy
- Easy intuitive operation and robust weatherproof (IP65) design
- Automatic and manual triggering, fully automatic tuning
- Flash memory for up to 32768 measurement points (incl. geographic coordinates, date, and time with optional external GPS receiver)
- Resealable sensor for repeated filling

Applications

- Geological mapping of the Earth's magnetic field
- Archaeological ground magnetic survey
- Environmental and engineering site assessment
- Mineral exploration and UXO detection
- Stationary use in magnetic observatories
- Education: Teaching geological methods



Description

The model AM502 is a proton precession magnetometer which can be used for stationary measurement of the Earth's magnetic field as well as for mobile magnetic field mapping. An optional external GPS receiver allows to record measurement data including geographic coordinates, date, and time.

The measurement principle of the proton precession magnetometer relies on fundamental physical constants. This results in accurate measurement data which are almost drift-free and independent of the sensor orientation. The AM502 proton precession magnetometer combines this unique measurement principle with a rugged and cost-effective design. Its ease of use and intuitive operation makes the AM502 magnetometer the ideal choice for a variety of applications in geophysics, archaeology, environmental science, and scientific education.

The AM502 control unit contains a dot matrix LC display, few control buttons, and connectors for power supply, sensor, and data interface. Power can be supplied by an external battery or mains power supply unit. The sensor is re-fillable allowing safe shipping of the instrument and on-site filling with suitable fluid.

Specifications

Display resolution:	0.1 nT
Absolute accuracy:	2.0 nT
Sensitivity:	0.3 nT (at 1/s sampling rate)
Measuring range:	30,000 to 60,000 nT, other ranges on request
Sampling rate:	1/s to 1/min or manual triggering
Digital interface:	RS-232, 19200 baud
Supply voltage range:	10 to 15 V
Current consumption:	0.8 A typically, 2.0 A maximum
Dimensions of control unit:	171 mm x 130 mm x 54 mm; weight: 0.6 kg
Sensor dimensions:	75 mm diameter, 235 mm long
Sensor weight:	2.0 kg with 0.3 l fluid
Length of sensor cable:	2 m
Operating temperature range:	-20 to +40 °C
Weatherproof rating:	IP65
Optional GPS receiver:	1.5 m accuracy, UTC time zone