Proton Precision Magnetometer

CIS – PPM - Proton Magnetometer: Introduction

The magnetism of rocks, ores and geological structures in nature is uneven. Under the geomagnetic field, the magnetic inhomogeneity will cause the spatial distribution of the geomagnetic field to change. The magnetic field of magnetic bodies is superimposed on the normal geomagnetic field, and this superimposed magnetic field is called magnetic anomaly. By detecting magnetic anomalies with proton precession magnetometer, the distribution of magnetic ore bodies and geological structures
can be inferred.

After compared other proton magnetometers, we have spent two years developing a new generation
proton magnetometer. It's light and portable. It uses a thermostatic crystal oscillator (OCXO) with high accuracy and stability to make it more stable.
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Standard GPS support GNSS, GPS, Beidou and GLONASS systems, which provide location and accurate time synchronzation. The time synchronization accuracy reaches 30 ms, which is more convenient to use.

It supports mobile, walk or base station mode. It mainly used to explore minerals (such as iron ore, lead zinc ore, copper ore, etc.), geophysical exploration in geological structures, archaeology, earthquake, volcanic activity research and long-term geomagnetic measurement stations.

Application

- Engineering investigation, such as pipeline detection, etc.
- Earthquake precursor monitoring, volcano observation and other environmental and disaster
- geological work
- Oil and natural gas exploration, research on geological structure and geotectonics related to oil
- and gas
- Mineral exploration, such as iron ore, lead-zinc ore, copper ore, etc.
- Base station magnetometer for aerial and marine magnetic survey
- Detection of small ferromagnetic objects, etc.
- Fault location
- Archaeology
- Hydrology

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Features

- It can measure the total field of the geomagnetic field or the gradient measurement (horizontal gradient or vertical gradient, need to add probe and probe holder)
- Using walking MAG acquisition mode can collect magnetic field data while walking in the field, so as to obtain continuous observation profiles
- External GNSS, no need to configure baudrate. It can be used to store the coordinate values of the measuring points, and at the same time, the proton magnetometer is time synchronized, and the time synchronization accuracy reaches 30 microseconds
- Built-in high-precision constant temperature crystal oscillator not only ensures measurement accuracy, but also ensures measurement stability
- It can display the magnetic field strength curve, easy to operate and intuitive data
- Can move single point measurement and move continuous measurement
- Light and portable, the whole system uses a backpack strap, and one person can complete all measurement tasks
- With U disk transmission and RS-232 transmission, two data transmission modes
- Professional geological software can draw contour maps, profiles maps, etc.
- 32M memory, support modify
- Hard aluminum alloy shell, sand blasting and oxidation treatment, ITT imported socket, which can be plugged in and out for tens of thousands of times, also suitable for harsh environments, IP67 grade
- There is high-precision time synchronization between base station observation and field mobile observation, which is very important to ensure high-precision observation results in magnetic interference area
- Both full range automatic tuning and manual tuning
- The signal quality shall be monitored in time, and the degradation of signal quality can be found in time to take remedial measures

Specification	
Sensitivity:	0.05nT
Dynamic range:	20,000-120,000nT
Absolute accuracy:	+ - 0.01 nT
Resolution:	0.01 nT
Samples:	3s ~ 60s @Mobile Mode; 3~3600s @Base Mode
Gradient:	Tolerance:>5000nT/m
Remote Control:	optional remote control via RS-232 interface
Input/Output:	RS-232 via 10 pin weatherproof connector with USB adapter
Internal Memory:	32MB (209715 readings in Manual Mode, 699050 readings in Base Mode)
Dimension & weights:	Console: 220mmx70mmx175mm, 1.57kg
Sensors:	140mm(L)x70mm(D); 1kg
Operating Temperature:	-40°C to +55°C
Standard Components	
GPM-1 Console 1x	
Harness 1x; Charger 1x	
Sensor with Cable 1x	
Aluminum rod 50cm 4x	
Standard GPS 1x	
RS-232 Cable with USB adapter	
Instruction Manual 1x	
Shipping Case 1x	
Option Accessories	
GPM-1g Console/Sensor with/High resolution GPS	

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