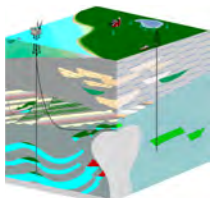
KMS Technologies
Innovating Solutions

Fluxgate magnetometer
KMS-029
32-bit digital

KMS-029 Fluxgate magnetometer



Product benefits

- Low profile 3-component magnetometer DC - 180 Hz
- Can be used to substitute vertical coil (les digging)
- Fluxgate magnetometer with low noise 32 bit acquisition module for high resolution applications
- 3 Channel, 32-bit simultaneously sampling
- Sampling rate up to 4 KHz
- Direct connection with KMS-820 acquisition unit with one cable
- Allows synchronous acquisition with KMS-820 analoge sensors
- Digital interface with acquisition system for easy compatibility
- Expandable to multiple modules per KMS-820
- GPS synchronized through KMS-820
- Enable MT station capability for simultaneously sampling over both low and high frequencies

Product applications

KMS-029 used the LEMI-029 sensor in a ruggedized non-metallic housing including a 32-bit digitizer shown in figure 1.

It is used for low frequency magnetotelluric applications and can be used to replace the vertical coil when digging is difficult in hard rock. Below 0.1 Hz it usually has better noise characteristics than induction coil magnetometers. We developed processing to extend this range in many case to 10 Hz as shown in figure 2.

Figure 1: Digital fluxgate connected to KMS-820 acquisition unit.

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Product specification

Frequency bandwidth	32 bit ADC: DC ~ 2 KHz Fluxgate sensor: DC – 180 Hz
Sampling rate	Up to 4 KHz customizable & selectable
A/D resolution	32 bit
Input range	-2.5 V ~ + 2.5 V
Input impedance	> 1 Mohm
Communication protocol	SPI interface
Supply voltage	+5V DC
Power consumption	Typical 1 W (fluxgate)
Operating temperature range	-25° to 85° C
Packaging	Ruggedized PVC box
Length, width, height	12 * 7 * 3 inch
Noise level	6 pT/SQRT(Hz) @ 1 Hz
Sensor	LEMI 029

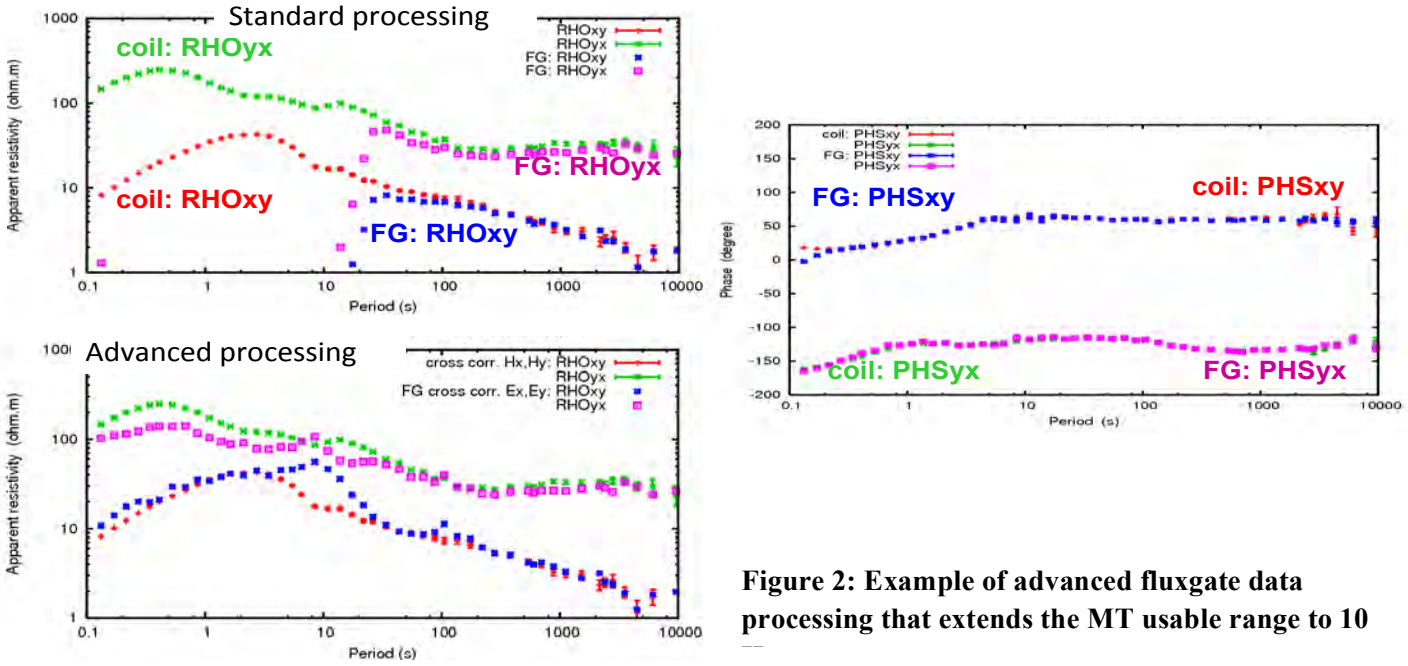

Figure 2: Example of advanced fluxgate data processing that extends the MT usable range to 10