

Application of Magson Fluxgate Magnetometers

Magnetometer for Geomagnetic Observatories

The magnetometer for observatory applications consists of a vector-compensated ringcore sensor with a Helmholtz coil system made of titan (see Figure) and the digital fluxgate electronics. The sensor head is connected to the electronics box by a 20m cable. The Magnetometer is interfaced by a host PC via RS232. The host PC serves as a data logger. The sampling rate is usually 1vector/sec. However, with an external trigger (e.g. with the observatory clock or GPS clock) the measurement period can be adjusted to a desired value <4Hz. Two measurement ranges, which differ in the differential non linearity (DNL) are available. The first range covers the whole earth's magnetic field range of +/-60000nT with a DNL of 350pT. The second range covers a magnetic field of +/-4000nT with a DNL of 30pT. For the second range an automatic main field compensation is available. Besides the magnetic field vector the temperature of sensor and electronics box is sampled.

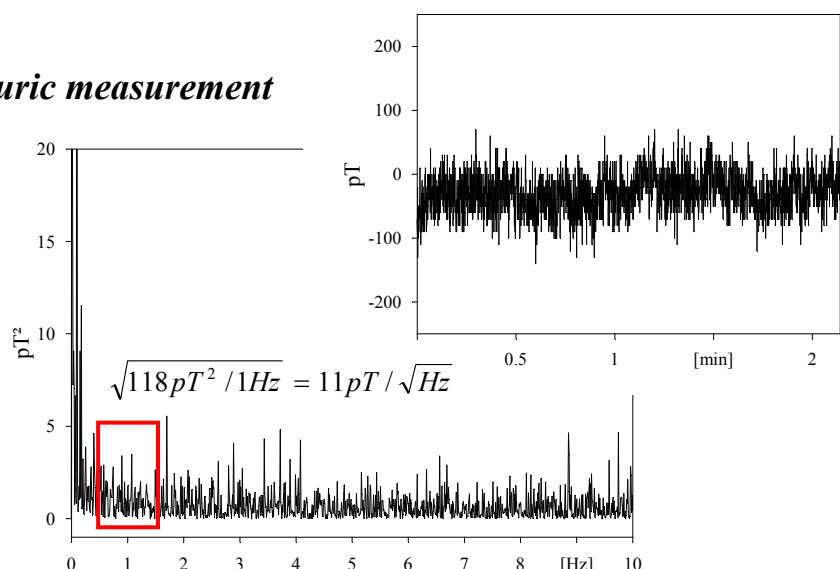


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dynamic range :	+/-60000nT in full Earth field mode(DNL: 350pT) +/-4000nT in variometer mode (DNL: 30pT)
resolution:	10pT in both modes
data interface:	RS232, optional external trigger (TTL-level or RS232-level)
data format:	1Hz mean values (with internal trigger) or <4Hz with external trigger ASCII (optional binary), 19200baud
power consumption:	12V / 2.0W

Magnetometer for magnetotelluric measurement

The observatory magnetometer mounted in a water protected housing can also be used for magnetotelluric measurements. The Figure shows the noise of the magnetometer with a 20Hz sampling rate. Magnetometers with digital as well as analogue signal outputs are available. In the digital version E-field components can be sampled synchronously.



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