Product Memo

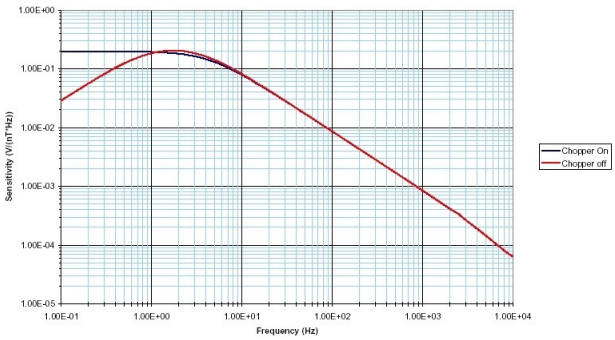
MFS-10e

Broad Band Induction Coil Magnetometer

The broadband induction coil magnetometer *MFS-10e* has been developed to measure variations of the Earth´s magnetic field, particularly for applications in Magnetotellurics (MT) and Controlled Source Audio Magnetotellurics (CSAMT). It covers a wide frequency range from 0.0001 Hz up to 10 kHz. In spite of its wide bandwidth, the *MFS-10e* shows outstanding low-noise characteristics, extremely low temperature drift of input offset voltage and offset current and a very stable transfer function over temperature and time. The *MFS-10e* is a shortened version of the MFS-06e with a double core winding.

The MFS-10e is specially designed to be used as z-compent.
*The coils is **29 cm shorter** comapared to the famous MF-06e (but has 1 kg more weight).*
Use the MFS-01e where you excpect rocky or hard surface.
The MFS-06e will slightly outperform the MFS-10e (especially above 1 kHz). For default MT measurement or x-y components (horizontal) the MFS-06e is preferred. Hence that for the z-component (induction vector / tipper) higher frequencies are of less importance.

Metronix takes special care of the initial calibration of all *MFS-10e* magnetometers as part of the ISO9001 certified production process. Tests have demonstrated an excellent long time stability of the transfer function.
The integrated calibration facility makes it easy for the user to perform an online calibration or test of the magnetometer´s transfer function. A differential test signal can simply be injected into the CAL input of the sensor



Sensitivity

Technical data:

Frequency range	0.00025 Hz .. 10 kHz
Frequency bands	0.00025 Hz 500 Hz (chopper on) 10 Hz 10 kHz (chopper off)
Sensor noise	1.5 * 10^{-2}nT/√Hz @ 0.01 Hz 1.5 * 10^{-4}nT/√Hz @ 1 Hz 5.0 * 10^{-5}nT/√Hz @ 1000 Hz (chopper off)
Output sensitivity	0.2 V/(nT*Hz) f << 4 Hz 0.8 V/nT f >> 4 Hz for exact values refer to individual calibration file
Output voltage range	+/- 10 V
Function	Induction coil with magnetic field feed back
Connector	ODU G32KON-T10QJ00-000 (coil socket) ODU S22KON-T10MJG0-7000 (cable plug)
Calibration input sensitivity	4 nT / V
Feedback cut-off frequency	4 Hz
Supply voltage	+/- 12 V to +/- 15 V stabilized and filtered
Supply current	+/- 25 mA
Case	ruggedized, waterproof case
Weight	appr. 9.0 kg
External dimensions	length 853 mm, diameter 75 mm
Operating temperature range	-25°C ..... + 70°C

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