شرکت چشم زیر سطح (نماینده انحصاری)
C.Z.S Ltd
Phone : 77680975 - 77680976
Email : info@czscompany.com
Web : www.czscompany.com

Magnetic Field Compensation System MR-3

Three axis automatic compensation of low frequency magnetic field disturbances

Features

- Continuous real time compensation of magnetic field disturbances from DC to ∼1 kHz
- Typical 40 dB attenuation of 50 Hz magnetic field
- Magnetic field measurement with high resolution fluxgate sensors
- Rugged analog design, no tedious programming
- Integrated power amplifiers for direct connection of compensation coils
- Field monitor and alarm functions

Applications

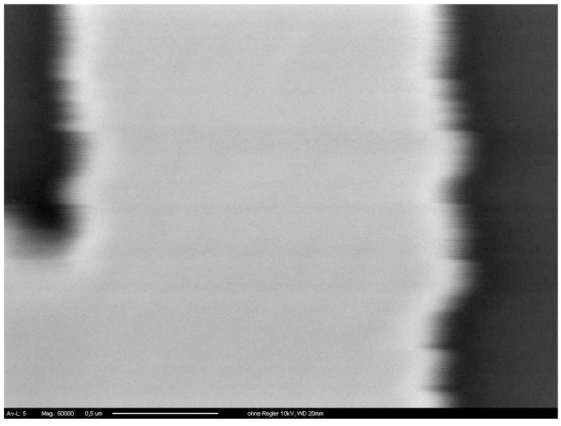
- Improvement of electron microscope images (SEM and TEM)
- Biomagnetic and paleomagnetic applications
- Compensation of power line frequencies (50/60 Hz) and harmonics
- Attenuation of slow or stepped magnetic field changes caused by vehicles, moved magnetic objects, elevators, etc.
- Special versions for MRI applications available

Description

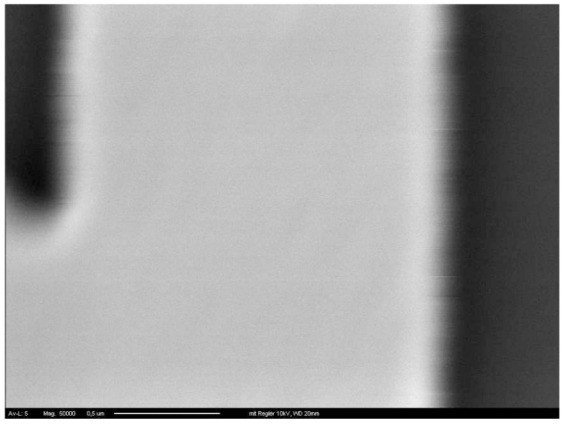
The magnetic field compensation system MR-3 is a proven solution of problems related with magnetic field noise. Typical applications are noise reduction in electron microscopy, electron and ion beam experiments, magnetic resonance imaging (MRI), biomagnetic investigations, SQUID operation, and paleomagnetic research.

The MR-3 is a feedback compensation system. The magnetic field noise is reduced by establishing a compensating magnetic field in opposite direction. The MR-3 continuously compensates magnetic field disturbances in the frequency range from DC to ∼1 kHz. The magnetic field is measured with a low noise triaxial fluxgate magnetometer. Analog control electronics generate compensation signals which are fed to the built-in power amplifiers for direct connection of compensation coils. Typically, such coils simply consist of a set of cable rings with a low number of wires installed in the edges of the laboratory.

Customized modifications, compensation coils, and installation service are available on request.



MR-3 off



MR-3 on

SEM image improvement

Specifications

Magnetic field sensor	triaxial fluxgate sensor
Sensor dimensions	diameter 25 mm × 70 mm
Zero drift	< 0.1 nT/K
Noise	< 0.7 nT RMS (0.1 Hz $<$ f $<$ 1000 Hz)
Analog outputs	1 V/μT, BNC connectors for X, Y, Z
Bandwidth	0 to 1000 Hz (-3 dB)
Digital displays	show incremental DC or true rms AC magnetic field for X, Y, and Z
Analog meters	show DC coil current, range ± 3 A
Attenuation @ 50 Hz	typ. 40 dB at sensor position
Attenuation @ 250 Hz	typ. 20 dB at sensor position

Subject to alterations.