



## Magnetic Field Compensation System MK-1

Single axis compensation  
of low frequency magnetic field disturbances



### Features

- Magnetic field measurement with high resolution fluxgate sensors
- Meas. range 200  $\mu$ T, DC to 1 kHz
- Selective compensation of different frequencies through switchable filters
- Modular system equipped with up to three magnetometers and filters
- Integrated power amplifier for direct connection of compensation coils
- Designed for permanent operation

### Applications

- Reduces magnetic field disturbances in MRI applications
- Compensation of power line frequencies (50/60 Hz)
- Compensation of 16.7 Hz (railway) or other custom frequency
- Suppression of slow or stepped magnetic field changes caused by vehicles, moved magnetic objects, elevators, etc.

## Specifications of frame unit with power amplifier

Supply voltage	230/115 V, AC 50/60 Hz
Current consumption	2 A
Enclosure	aluminium 19 inch, 3 HU, 320 mm depth
Operating temperature	0 to 40 °C
Preamplifier gain	0 to 11, adjustable in steps
Gain of power amplifier	0.5 A/V
Max. output current	2.5 A
Min. load for permanent operation	$\geq 3 \Omega$
Compliance at 2.5 A	typ. $\pm 7 \text{ V}$

## Specifications of magnetometer

Display	$3\frac{1}{2}$ digits LC display with sign
Switchable measurement ranges	$\pm 19.99 \mu\text{T}$ , $\pm 199.9 \mu\text{T}$
Display resolution	10 nT
Noise	$< 0.7 \text{ nT RMS}$
Accuracy	$0.5 \% \pm 25 \text{ nT} \pm 1 \text{ digit}$
Offset stability	$< 0.1 \text{ nT/K}$
Scale factor stability	$< 40 \text{ ppm/K}$
Offset adjustment	$\pm 500 \mu\text{T}$ coarse and fine
Stability of offset setting	$< 40 \text{ ppm/K}$
Magnetometer analog output	0.03 V/ $\mu\text{T}$ , short circuit protected, BNC connector
Output voltage range	typ. $-6 \text{ V}$ to $+6 \text{ V}$
Bandwidth	0 to 1 kHz ( $-3 \text{ dB}$ )
Sensor cable	10 m long, shielded
Sensor dimensions	$36 \text{ mm} \times 30 \text{ mm} \times 15 \text{ mm}$

## Specifications of filter unit

Filter channels	1 low pass, 2 band pass filters
Band pass filter type	biquad active filter, 2nd order
Bandwidth ( $-3 \text{ dB}$ )	$\sim 2.6 \text{ Hz}$
Frequency corners	16.7 Hz (or custom) and 50 Hz (or 60 Hz)
Adjustment range of phase shift	$-90^\circ$ to $+30^\circ$
Channel separation	$> 20 \text{ dB}$

Changes without notice.