

Manual power line frequency magnetic field generator



- Stand alone test solution
- Magnetic field test with 50 or 60Hz up to 40A/m
- Complies with EN/IEC 61000-4-8

Electronic devices containing components sensitive to magnetic fields need to be tested for immunity to electromagnetic fields. Product standards define the applicability of such tests and specify the field strength. The basic standard EN/IEC 61000-4-8 describes the test methods for magnetic fields with power line frequencies.

The MFO 6501 provides – together with a magnetic field antenna INA 702 or INA 701 – a stand alone test solution to EN/IEC 61000-4-8 and all the derived product standards. No additional hardware is required (except, maybe, a classical multimeter or ammeter).

The unit consists of a programmable low impedance power amplifier boxed in a sturdy aluminum housing fitted with convenient handles. It is used to drive magnetic loop antennas type INA 702 or INA 701. Other magnetic loops with similar specifications and known antenna factors may be used instead.

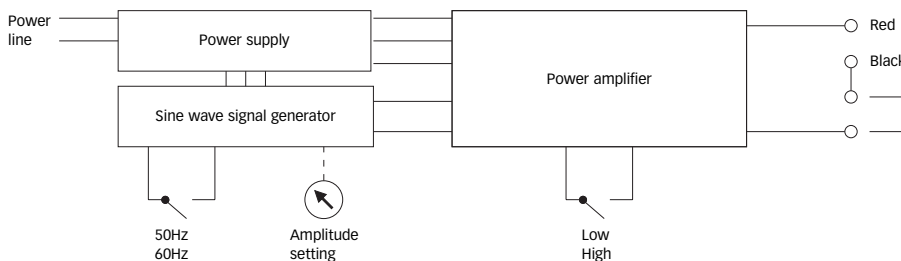
The resulting magnetic fields depend on the antenna used. 50Hz and 60Hz magnetic fields up to 40A/m can be generated with the antenna INA 702.

This power amplifier design has a number of advantages compared with arrangements

using step-down transformers and variable transformers: Reduced size, reduced weight, short-circuit proof, 50Hz and 60Hz testing irrespective of the local power network, convenient one box solution, good price/performance ratio.

Operation is easy: A toggle switch to select the frequency (50Hz or 60Hz), a switch to select the amplifier range and a rotary knob to adjust the magnetic field strength. A general purpose multimeter can be fitted into the current path to the antenna for accurate field strength setting.

Block diagram



Technical specifications

With magnetic antenna loop INA 701:	
Field strength, low range:	0.08A/m to 0.4A/m (80mA to 400mA drive current)
High range:	0.2A/m to 3.6A/m (200mA to 4.1A drive current)
With magnetic antenna loop INA 702:	
Field strength, low range:	0.8A/m to 4A/m (80mA to 400mA drive current)
High range:	2A/m to 40A/m (200mA to 4.1A drive current)
Total harmonic distortion (THD):	<8% for levels 1 to 4, <3.5% at max. output
Test frequency:	Selectable 50Hz and 60Hz \pm 3%
Magnetic field adjustment:	Manually, by rotary button
Instrument supply:	Universal power supply 100 to 250VAC, 47 to 63Hz, power ON/OFF switch and 3.15A slow-blow fuse
Connection to antenna:	Universal safety laboratory sockets (connecting cable supplied with INA 701 and INA 702)
Connection for ammeter:	Universal safety laboratory sockets
Operating temperature:	5 to 40°C
Overload protection:	Temperature sensor
Dimensions:	L x W x H 380 x 195 x 180mm (15 x 7.7 x 7.1")
Weight:	4kg (8.8lbs) approx.

Test setup with antenna and ammeter

