

MGA 1030 Additional Equipment

Loop Sensor/Radiating Loops:

For immunity tests radiating loops are necessary to generate magnetic fields. Suitable loops are available. Measuring emissions require loop sensors which can also be ordered from our company



Loop Sensor
MGA_LS040

Radiating loop
MGA_RL120

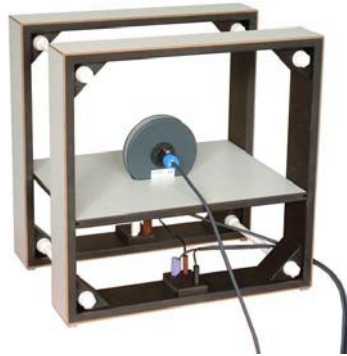
Radiating Loop / Loop Sensor
MGA_RLS133

Type	Loop sensor MGA_LS040	Radiating loop MGA_RL120	Loop sensor MGA_LS133	Loop sensor / radiating loop MGA_RLS133
Mechanical Data				
Diameter	40 mm	120 mm	133 mm	133 mm
Body material	PVC	MDF	MDF	MDF
Wire	7-41 Litz wire	2.0 mm copper wire	7-41 Litz wire	0.25 mm ² Litz wire
Number of turns	51	20	36	36
Number of layers	1	4	4	4
Shielding	Electrostatic	none	Electrostatic	Electrostatic
Distance to EUT	5 cm	5 cm	7 cm	10 cm / 5 cm
Connector at coil	Speakon	4 mm MC socket	Speakon	Speakon
Connector at cable	XLR	4 mm MC plug	XLR	XLR / 4 mm MC plug
Coil factor (50 mm)	---	76,3 1/m	---	138,5 1/m
Electrical Data				
Correction factor	see calibration sheet (50 Ω / 600 Ω / 1MΩ)	---	see calibration sheet (50 Ω / 600 Ω / 1MΩ)	see calibration sheet (50 Ω / 600 Ω / 1MΩ)
DC resistance	~ 4,5 Ω	~ 0,05 Ω	~ 10 Ω	~ 1,1 Ω
Inductance	~ 130 μH	~ 120 μH	~ 340 μH	~ 340 μH
Resonant frequency	---	> 1.8 MHz	---	> 0.9 MHz
Frequency range	10 Hz - 1 MHz	DC - 500 kHz	10 Hz - 1 MHz	DC / 10 Hz - 500 kHz
Nominal current	---	15 A	---	5 A
General Data				
Connecting cable	Microphone cable	Litz wire 2 x 1.5mm ²	Microphone cable	Microphone cable / Litz wire 2 x 1.5mm ²

MGA 1030 Additional Equipment

Helmholtz Coils

Several Helmholtz coils are available for susceptibility tests. Our company also offers tri-axial Helmholtz coils which are suitable for MGA1030. To achieve 1000 A/m at 1 kHz, it is absolute necessary to use our Helmholtz coils and an optional compensation board.



*Helmholtz coil MGA_HCS_50-28
with loop sensor MGA_RLS_133*



*Triaxial
Helmholtz coil
MGA_HCST_50-28*

Type	Helmholtz Coil MGA_HCS_50-28	Helmholtz Coil MGA_HCS_125-75	Helmholtz Coil MGA_HCST_50-28
Mechanical Data			
Number of axes	1	1	3
Dimension [cm]	50	125	50 / 46 / 42
Number of turns (per coil)	22 + 4	40 + 10	22 + 4
Coil separation [cm]	28	75	28
Electrical Data			
Coil factor [m ⁻¹] (typical)	65.9 / 11.2	47.5 / 10.3	X-axis: 66.1 / 11.3 Y-axis: 67.8 / 11.8 Z-axis: 69.1 / 12.2
Total resistance DC [Ω] (typical)	0.63 / 0.15	9.8 / 2.0	X-axis: 0.58 / 0.10 Y-axis: 0.53 / 0.09 Z-axis: 0.48 / 0.08
Total inductance [mH] (typical)	1.73 / 0.07	16.4 / 1.0	X-axis: 1.73 / 0.07 Y-axis: 1.52 / 0.06 Z-axis: 1.33 / 0.05
Resonant frequency [kHz]	> 150 kHz	> 150 kHz	> 150 kHz
Rated current [A]	16	5	16
Short term current [A]	20	7	20

MGA 1030 Additional Equipment

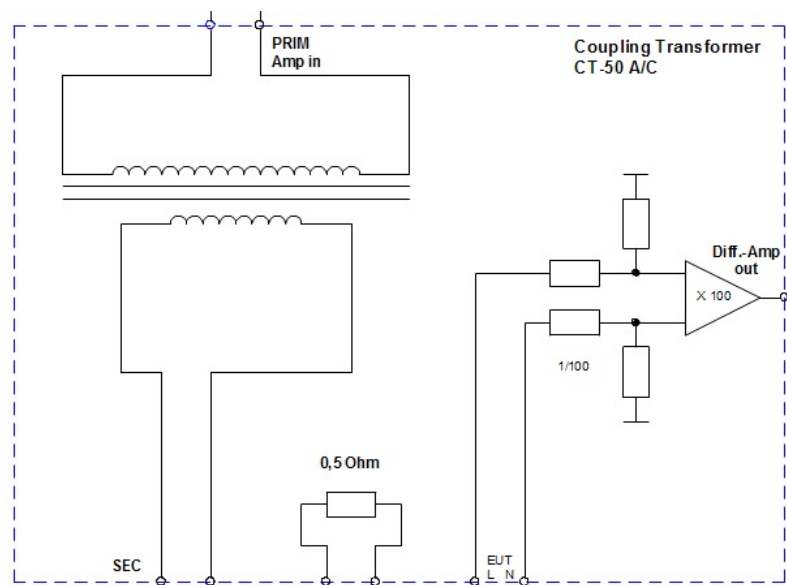
Coupling Transformer for conducted susceptibility tests according to CS101 / MIL-STD-461E/F and DO160G, Section 18 **MGA_CT-50A**



Features

- Integrated 0.5 Ohm resistor (active cooling).
- Integrated high CMRR differential amplifier for measurement of coupled voltages without disturbing supply voltage.
- Fully automated tests in conjunction with MGA-1030 Magnetic Field Generator / Analyser.
- Insulated panel receptacles with Ø 6 mm pin for high secondary current.
- Scope of delivery includes connecting cables.

Block diagram



Specifications MGA_CT-50A

Primary	
Inductance	~ 4 mH (unloaded)
Current rating	16 A
Input voltage (saturation level)	15 Hz: > 12,5 Veff 30 Hz: > 25 Veff
Connector	Safety panel receptacle Ø 4 mm
Secondary	
Inductance	~ 1 mH (unloaded)
Saturation	50 A (AC or DC)
Connector	Safety panel receptacle Ø 6 mm (>32A) Integrated Ø 4 mm socket (<32A)
General	
Frequency range	10 Hz - 250 kHz
Turns ratio	2 : 1 (step down)
Dimension	480 mm x 180 mm x 315 mm (W x H x D)
Weight	13.5 Kg
Precision resistor	
Specifications	0.5 Ohm, 1%, 100 W, active cooling
Differential amplifier	
Gain (Secondary)	1,0 ± 1%
Frequency range	DC - 700 kHz (small signal) / DC - 200 kHz (full power)
CMRR	> 60 dB (400Hz)
Noise	< 6.5 mVrms (DC - 2 MHz)
Output	20 Vpp / 10 mA

MGA 1030 Additional Equipment

Testing Equipment According to EN 55103-2

EN 55103-2 requires certain immunity tests for frequencies from 50 Hz to 10 kHz. The following test equipment fulfills all requirements according to EN 55103-2, annex B



*Common mode test
adapter MGA_B1
according to
Fig. B.1 (EN 55103-2)*



*Calibration network MGA_B2
according to
Fig. B.2 (EN 55103-2)*



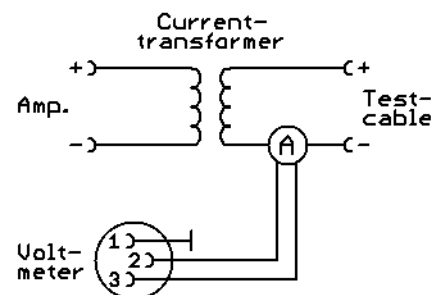
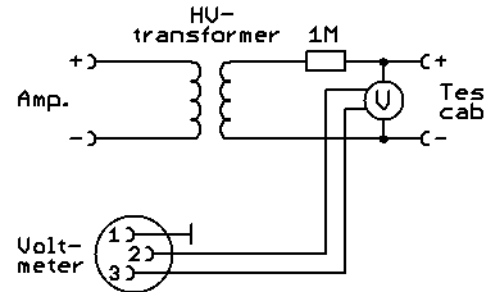
*Current transducer incl.
correction network MGA_B4
according to
Fig. B.4 (EN 55103-2)*

Type	Common mode test adapter MGA_B1	Calibration network MGA_B2	Current transducer incl. correction network MGA_B4
General Data			
Connectors	Generator in: BNC Output: XLR male	Input: XLR female Output: XLR male	Audio in: 4mm MC safety jacks Input: XLR female Output: XLR male

MGA 1030 Additional Equipment

Audio Frequency Susceptibility Test Device (DO160F)

Induced Signal Susceptibility **MGA_ISS-19**



Features

- Fully automated tests in conjunction with MGA 1030 Magnetic Field Generator / Analyzer
- Magnetic field and electric field susceptibility tests with one unit
- Scope of delivery includes connecting cables

Specifications

DO160F	
19.3.1	20 A @ 400 Hz
19.3.2	120 Am – 0,8 Am / 350 Hz – 32 kHz (Test length 3m)
19.3.3	5400 Vm – 135 Vm / 350 Hz – 32 kHz (Test length 3m)
AC Power	230 VAC / 50 Hz
Dimensions (W x H x D)	183,5 x 111 x 300 mmm
Weight	Approx. 6,5 kG