

# 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

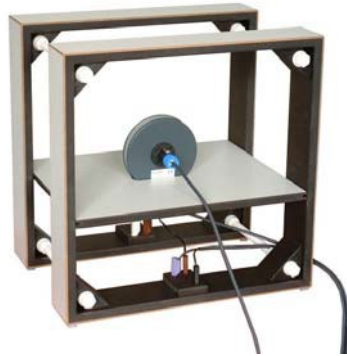
**Radiating Loop / Loop Sensor**  
MGA\_RLS133

Type	Loop sensor <b>MGA_LS040</b>	Radiating loop <b>MGA_RL120</b>	Loop sensor <b>MGA_LS133</b>	Loop sensor / radiating loop <b>MGA_RLS133</b>
<b>Mechanical Data</b>				
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 <sup>2</sup> 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
<b>Electrical Data</b>				
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
<b>General Data</b>				
Connecting cable	Microphone cable	Litz wire 2 x 1.5mm <sup>2</sup>	Microphone cable	Microphone cable / Litz wire 2 x 1.5mm <sup>2</sup>

# 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 <b>MGA_HCS_50-28</b>	Helmholtz Coil <b>MGA_HCS_125-75</b>	Helmholtz Coil <b>MGA_HCST_50-28</b>
<b>Mechanical Data</b>			
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
<b>Electrical Data</b>			
Coil factor [m <sup>-1</sup> ] (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

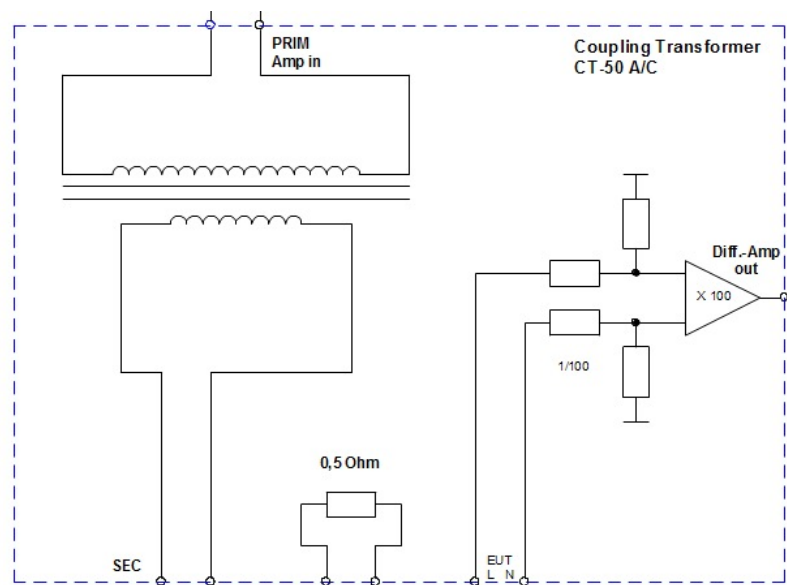
**Coupling Transformer** for conducted susceptibility tests according to CS101 / MIL-STD-461E/F and DO160G, Section 18 **MGA\_CT-50A**



## 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

<b>Primary</b>	
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
<b>Secondary</b>	
Inductance	~ 1 mH (unloaded)
Saturation	50 A (AC or DC)
Connector	Safety panel receptacle Ø 6 mm (>32A) Integrated Ø 4 mm socket (<32A)
<b>General</b>	
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
<b>Precision resistor</b>	
Specifications	0.5 Ohm, 1%, 100 W, active cooling
<b>Differential amplifier</b>	
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)*



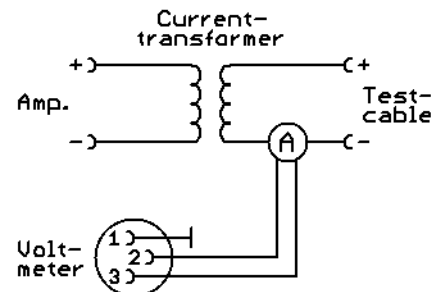
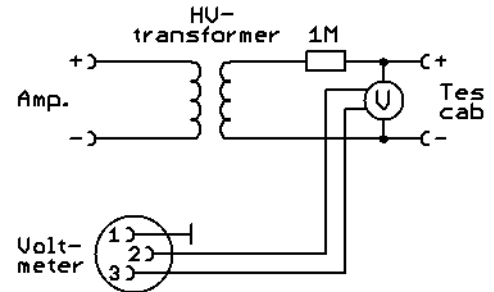
*Current transducer incl. correction network MGA\_B4 according to Fig. B.4 (EN 55103-2)*

Type	Common mode test adapter <b>MGA_B1</b>	Calibration network <b>MGA_B2</b>	Current transducer incl. correction network <b>MGA_B4</b>
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 mm
Weight	Approx. 6,5 kg

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