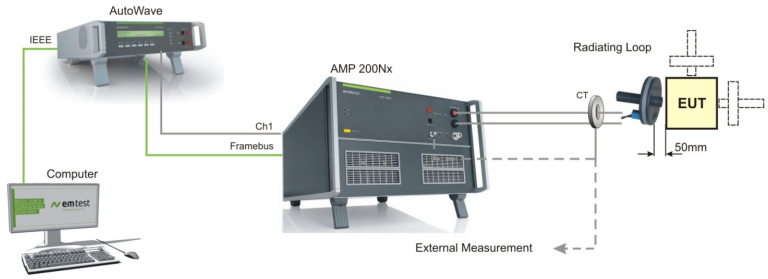
emtest / AMETEK®

AMP 200N2
Audio Amplifier

The AMP 200N2 has been designed as a low-frequency signal source to generate sinusoidal signals used to simulate ripple noise and ground shift noise as required by a variety of standards in the avionics, military and automotive industry.

The AMP 200N2 is controlled by either the NetWave (for testing Electrical Vehicles, avionics, military and nautic standard requirements. e.g LV 123, ISO 21498 and ISO 7637-4 Pulse C) or the AutoWave for LV automotive test requirements such as e.g. Ford FMC1278 or ISO 16750-2 Ed.5.
Additionally, the AMP 200N2 can be used to generate magnetic fields by means of a radiation loop or small Helmholtz coils as per various standards.

The buit-in measuring unit is able to measure available signals frequency selective. Two seperate input channels allow you to regulate on voltage and current values simultaneously. Using closed loop method, the system is capable to regulate on the exact target level.
By using either the autowave.control or net.control software it is possible to do substituition method, record a test and play it afterwards with the exact same data. The below sample picture shows the setup for magnetic field testing.



MAIN FEATURES

- **Automatic Closed Loop test procedures**
- **Built-in DDS sinus signal generator up to 500 kHz**
- **Output voltage max. 160 V p-p, 50 V rms**
- **Output current max. 18 A rms**
- **Designed for EV's and more**
- **Supports magnetic field tests up to 1100 A/m**
- **Short-circuit protected**
- **Integrated frequency-selective measurement 10 Hz - 250 kHz**

Test standards (extract)

NetWave	AutoWave
DO-160 E/F/G (section 18)	ISO 11452-8
ABDO100.1.2 G	ISO 11452-10
ABDO100.1.8, chapter 16	ISO 16750-2 Ed. 5
LV 123	SAE J1113
ISO 7637-4	Ford FMC 1278, RI 140/150, CI 210/250
ISO 21798	BMW 95002-2
MBN 11123	GMW 3097
GS 95023	VW 810000
VW 80300	MBN 10284-2
MIL STD 461 E/F/G	TS 0000048-07
MIL STD 704 A/B/C/D/E/F	an many more

Specifications

Parameter	Value
Amplifier Output	
Frequency Range	DC ... 500 kHz (sinusoidal) +/- 1 %
Signal Power	max. 1000 W (nominal)
Output Voltage	max. 160 V pp / 50 V rms
Output Current	max. 18 A rms DC current max. 25 A (DC H-field)
Bandwidth	Full Signal Range: DC - 100 kHz /// max. 50 V rms / 160 Vpp (+/- 10 %) * Extended Range 1: 100 kHz - 250 kHz /// max. 30 V rms / 80 Vpp (+/- 10 %) * Extended Range 2: 250 kHz - 500 kHz /// max. 30 V rms / 80 Vpp (+1 dB / -3 dB) *
Low Range	25 V pk / 17 V rms / max. 18 A rms (+/- 10 %)
Mid Range	55 V pk / 37 V rms / max. 14 A rms (+/- 10 %)
High Range	80 V pk / 55 V rms / max. 10 A rms (+/- 10 %)
Output Impedance	30 mΩ @ 1 kHz
Measuring Inputs	
Frequency Range	10 .... 250 kHz (+/- 5%)
Current Measurement	With external current clamp: Range 100 mV/A: 1 mA - 30 A rms Range 10 mV/A: 10 mA - 300A rms
Voltage Measurement	direct: 17 mV - 70V rms (or wih external voltage probe)
General Data	
Interface	Serial interface Framebus (internal bus), to connect to AutoWave or NetWave
Dimension	19", 6 HU (500 x 449 x 286 mm)
Weight	approx. 40 kg
Supply Voltage	115 VAC +10/-2 %, 50 ... 60 Hz 230 VAC +10/-15 %, 50 ... 60 Hz
Input Power	max. 1900 VA
Fusage	16 AT (115 V) / 10 AT (230 V)
Safety	Short circuit protected Overtemperature protected, active air cooling by fans
Operating Temperature	+10 ... 40 °C
Humidity	max. 85 %, non condensing
Athmospheric pressure	860 ... 1060 mbar

* Only signal generating, without using closed loop method

Accessories

RL 120	120 mm radiating loop for magnetic field, 1100 A/m up to 3 kHz, > 30 A/m @ 100 kHz
LS 040	Loop sensor for RL 120
DC HField Kit Radiating Loop	Including hall sensor, 2 different radiating loops, loop sensor, matching network, fixture
DC HField Kit Helmholtz	Including hall sensor, 2 different Hemlholtz coils, matching network, fixture
C-Box H-Field	Capacitance to adjust resonance point for certain Helmholtz coils
MN-DC HField	Matching network for DC magnetic field
CN 200N1	Coupling transformer, 50 A secundary
CN 200N100 ... 300	Coupling transformer, up to 300A secondary
AutoWave	Signal generator, master device for AMP 200N2
NetWave XX	Single or 3-phase electronic Power Source, 3 ... 108 kVA
PowerWave	3-phase electronic Power Source, 250 ... 1'000 kVA