

# PGA 1240-5A

# PGA 1240-16A

Power Generator  
DC – 300 kHz;  $\pm 50$  V



- For EMC tests according to the standard IEC/ EN 61000-4-16, -19 and IEC/ EN 61543
- Power module with 5A / 250 W or 16A / 800 W
- Signal generator with DC, sine, triangle and square waveforms
- External source can be added to internal signal
- Windows Application software, USB port

## Description

The PGA 1240 is a linear, extremely broadband precision power amplifier for the frequency range from DC to 300 kHz, and is ideal for applications requiring high-speed, fast-changing signals. The 250 W (800 W) power stage provides a maximum output current of up to 5 A (16 A) with a voltage gain of 10 and amplifies sine, triangle or square wave signals which are provided by the function generator. External signals can be added via an additional input and all functions of this generator / amplifier combination can be controlled via the supplied application software.

## Applications

### Tests according to IEC / EN 61000-4-16

For testing acc. to 61000-4-16 the PGA 1240 is designed for continuous noise levels (test level 1 to 4 and X up to 50V), for the short-term disturbance up to 300V the PGA 1330 is required. Both devices can be operated stand-alone and integrated into existing test systems. If both continuous and short term disturbances are to be tested, the PGA 1240 and PGA 1330 should be interconnected.

### Tests according to IEC / EN 61000-4-19

The PGA 1240 can be used as a test generator for both differential voltage and residual current testing according to IEC / EN 61000-4-19 incl. Appendix C (electricity meter). Since a constant current is required as a disturbing signal and the PGA 1240 generates voltage signals, the tests in Appendix C require an external multimeter (which supports SCPI) and an adapter. The multimeter measures the voltage across the adapter, the program calculates the current flowing and controls the output of the PGA 1240.

### Tests according to IEC / EN 61543

The tests according to IEC / EN 61543 are carried out in the frequency band from 1 kHz to 150 kHz and

requires a constant current as interference signal. The PGA 1240 generates a voltage signal and therefore requires an additional multimeter and an adapter to meet the requirements of IEC / EN 61543 standard. The multimeter measures the voltage and the program from the PGA 1240 calculates the current and regulates the voltage.

### General applications

The generation and amplification of small signals to generate larger output signals is necessary Practice in all areas of electrical engineering. The PGA 1240 is the ideal instrument here.

### Automatic testing facilities

With excellent signal quality and remote control via the USB interface, the PGA 1240 is the ideal choice for automated test equipment.

### Low-impedance loads

The PGA 1240 is ideal for operation at low impedance loads (e.g., Helmholtz coils). The possible halving of the operating voltage reduces the power loss accordingly.

## Features

### Waveform

The generator of the PGA 1240 provides 3 different waveforms: sine, triangle and rectangle. The frequency resolution is 0.05 Hz from DC to 300 kHz. For all waveforms, it is possible to superimpose a common-mode voltage.

### Technology

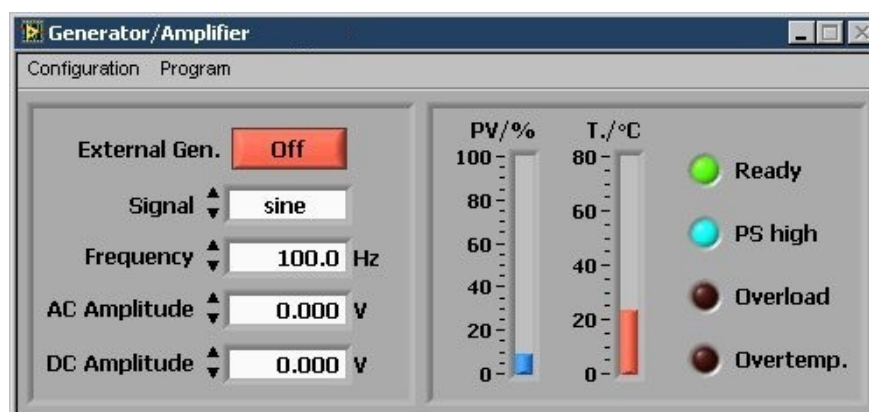
A completely linear circuit design guarantees lowest distortion, freedom from interference and high stability. Two different operating voltages optimize the power loss for loads with low impedance.

### Protective devices

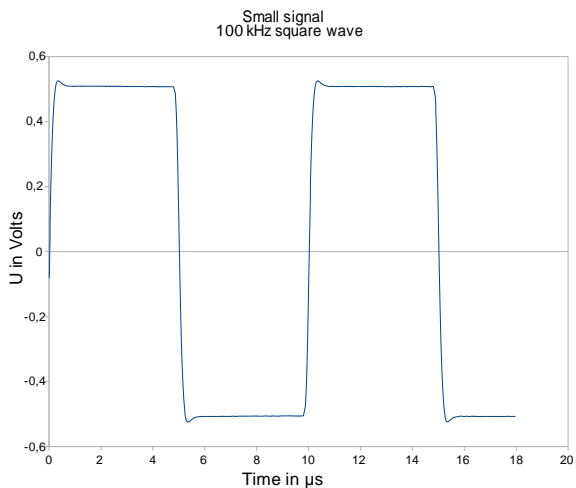
In addition to an over-temperature cut-off of the amplifier and transformer, a power loss calculation and an absolute current limit ensure perfect short circuit and overload protection.

### Software control

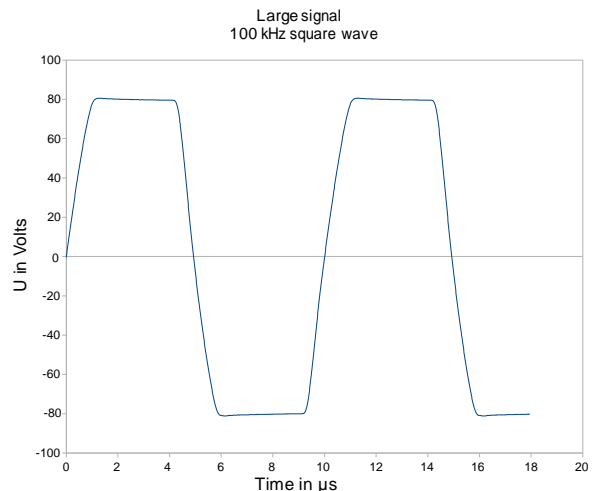
The package includes an application software that provides complete remote control of the PGA 1240 via the USB interface. Integration into existing, automated test systems is guaranteed by the disclosure of the interface commands.



**Typical Characteristics**



Square wave at 100 kHz (small signal) ± 500 mV



Square wave at 100 kHz (large signal) ± 80 V

| Amplifier Specifications                   | PGA 1240-5A                                                                        | PGA 1240-16A                     |
|--------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|
| Frequency range                            | DC - 1 MHz (Small signal -3 dB)                                                    |                                  |
| Power band                                 | DC – 200 kHz                                                                       |                                  |
| Slew rate                                  | 100 V/µs                                                                           |                                  |
| Offset                                     | ± 1 mV (± 0.1 mV / °C)                                                             |                                  |
| Voltage gain                               | 10 ± 0.1 % (± 0.01 % / °C)<br>[Option ultra stable gain: 10 ± 0.1 % (± 10 ppm/°C)] |                                  |
| Output voltage                             | 50 Vrms / ± 75 Vpeak                                                               |                                  |
| Output current                             | 5 Arms / ± 7.5 Apeak                                                               | 16 Arms / ± 24 Apeak             |
| Distortion (DC – 100 kHz, Load ≥ 4 Ω)      | < 0.10%                                                                            |                                  |
| Input impedance                            | 100 kΩ                                                                             |                                  |
| Output impedance                           | << 1 Ω and 50 Ω                                                                    |                                  |
| Max. input voltage                         | 80 V (cont.), 100 V (< 1 min)                                                      |                                  |
| Broadband noise (10 Hz – 1 MHz, Input 50Ω) | 0.5 mVrms                                                                          |                                  |
| Power dissipation (each side)              | 260 W (100 ms)                                                                     | 820 W (100 ms)                   |
| Mains voltage                              | 230 VAC / 50 Hz                                                                    |                                  |
| Remote control                             | USB                                                                                |                                  |
| Generator Specifications                   |                                                                                    |                                  |
| Frequency range                            | DC, 0.05 Hz - 300 kHz; resolution 0.05 Hz                                          |                                  |
| Frequency precision                        | ± 20 ppm                                                                           |                                  |
| Signal types                               | Sine, Square, Triangular                                                           |                                  |
| Mechanical data                            |                                                                                    |                                  |
| Dimensions (W x H x D)                     | 449 mm x 133 mm x 436 mm (3HE)                                                     | 449 mm x 177 mm x 585.5 mm (4HE) |
| Weight                                     | app. 14 kg                                                                         | app. 32 kg                       |

**Scope of Delivery:**

PGA 1240, user manual, CD with operating software, power cable 2m length, USB-A / USB-Cable 3m length, BNC / BNC cable 1,5m length, protocol factory calibration traceable acc. to ISO 17025.