



Signal Generator / Power Amplifier



KCF Technologies, Inc.

Part Number PA5100

Printed in USA

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For safe operation, please read the manual carefully before using the Signal Generator / Power Amplifier

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1. DESCRIPTION

The PA5100 Signal Generator / Power Amplifier is specifically designed to power the ES020 Electromagnetic Shaker. The Signal Generator generates both high quality sine waves and true white noise, and accepts an external signal for amplification. Combining the signal generator and power amplifier into one unit saves room on the laboratory tabletop and provides additional ease of use. A current-limiting safety switch is included in the design to prevent damage to the shaker from over-driving. The KCF Signal Generator / Power Amplifier is also used to drive a wide range of laboratory sound and vibration test equipment. Common applications include testing loudspeakers, microphones, hearing aids, and hydrophones, anechoic chamber and reverberation room experiments, acoustic filter experiments, acoustic phase matching, and the measurement of structural impedance, phase, and vibration response.

2. SPECIFICATIONS

Sine Function Frequency Range	20 Hz to 20 kHz
Digital LED Frequency Display	20 Hz to 20 kHz, refreshed at 10/second
Display Resolution	+/- 1 digit
Sinewave Amplified Output Range	0.15 mV _{rms} to 15 V _{rms}
Sinewave Amplitude Variation	+/- 0.035 dB
Sinewave Distortion	< 0.3%
Sinewave Output (not amplified)	778 mV _{rms} +/- 0.003 V @ 1kHz
White Noise Amplified Output Range	1 mV _{rms} to 2 V _{rms}
White Noise Output (not amplified)	70 mV _{rms}
Current Protection Limit	2.5 A
Power Input	110V +/- 10V, 60 Hz.
Size	360x207x120 mm
Ambient Operating Temperatures	0 deg C to 40 deg C

3. OPERATION

The Signal Generator consists of an RC resonator circuit to generate a sinewave signal, with the frequency controlled by controlling the voltage amplitude to the RC resonator. This continually generates an accurate sinewave in the frequency range from 20 Hz to 20 kHz. For safety, the Power Amplifier has built-in temperature, current overload, and short-circuit protection. The sinewave frequency is read on a digital LED display. The amplitude is indicated with a series of illuminated bars.

1. Before use, turn the amplitude adjustment knob counter-clockwise until it stops.
2. Connect the output to the shaker or load.
3. Turn on the power switch.
4. Choose the desired output signal button.
5. If using the sinewave, adjust the frequency with the frequency knob.
6. Adjust the amplitude knob to the desired output level.

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7. If near the maximum output power limit, the ten amplitude measurement lights will flash. If operation continues, the device will shut down and the overload light will come on. To resume operation, turn the amplitude knob to the counter-clockwise limit and press the reset button.

4. MAINTENANCE

The Signal Generator / Power Amplifier is maintenance free. For any maintenance needs, or in case of malfunction, please contact:

KCF Technologies, Inc.
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5. INCLUDED ACCESSORIES

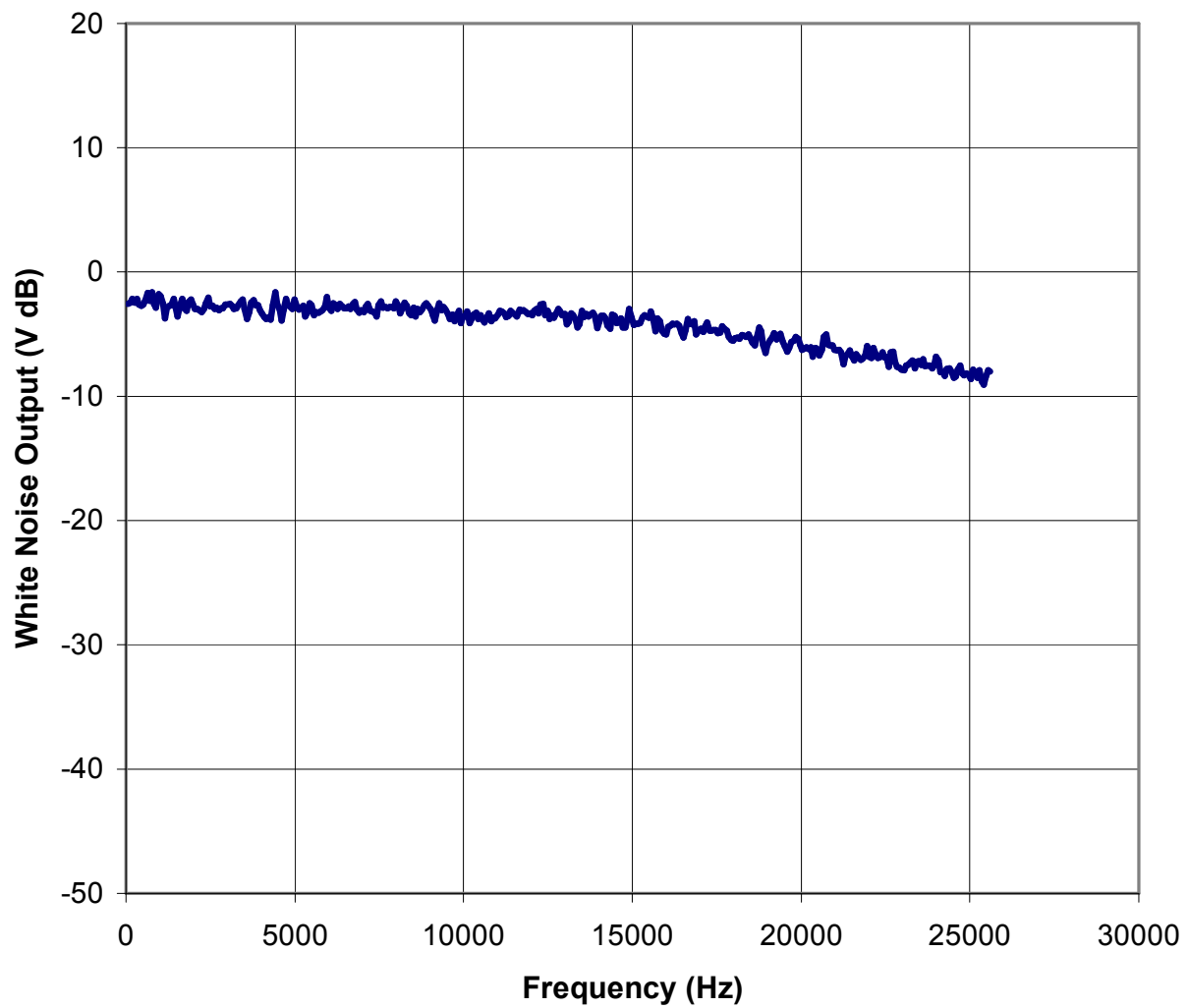
- | | |
|---------------------------------------|---------|
| 1. Signal Generator / Power Amplifier | 1 Unit |
| 2. Operating Manual | 1 Piece |

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APPENDIX A WHITE NOISE FREQUENCY SPECTRUM

Signal Generator White Noise Output



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