

Amsterdam, The Netherlands

April 28, 2016

New high voltage amplifier has lowest noise in the industry

Falco Systems presents their newest product: the [WMA-200 ultra-low noise high voltage amplifier](#). A high quality, high voltage laboratory amplifier optimized for experiments requiring world-class, ultra-low output noise.

Founding director and analog design expert Merlijn van Spengen, PhD: "I know from my own scientific research on MEMS adhesion and friction how important it is to have an amplifier with the lowest possible output noise. And now we proudly present it. When driving a typical MEMS or piezo device, this new product allows adjusting your position to within a picometer resolution (less than one hundredth of the diameter of an atom). It combines this spec with a relatively high bandwidth of 100kHz. At Falco Systems, we work hard to develop and build the best high voltage amplifiers possible. Both the highest speed (the WMA-300 model) and the lowest noise (the WMA-200 model) high voltage amplifiers are now Falco Systems products. This is a great achievement to celebrate our 10 years anniversary."



Specifications

- Ultra-low noise: $\sim 50 \mu\text{Vrms}$ with DC-100kHz; $\sim 20 \mu\text{Vrms}$ with DC-500Hz with load capacitor box
- 20x amplification up to +175V and -175V output voltage (with respect to ground)
- Short-circuit protected 275mA output current
- No overshoot with capacitive loads; bandwidth changes automatically to ensure stability
- 2 inputs; standard BNC connector and differential connector to reject interference
- BNC monitor out connector provides 1:100 replica of the output signal
- Available from stock, in a 230V and 115V version

Applications

Typical applications are the use of the WMA-200 amplifier as a high speed, ultra-low noise piezo driver, an amplifier for actuating MEMS devices, or for steering EO-modulators. It enables unprecedented resolution for e.g. nanopositioners, semiconductor test equipment, and in scanning probe microscopy such as AFM or STM.

Falco Systems has published a comprehensive [application note](#), which focuses on noise and interference, common pitfalls in high voltage amplifier noise assessment, and practical examples and recommendations.

Falco Systems

[Falco Systems](#) (est. 2006) designs and manufactures technology leading high voltage amplifiers for company R&D departments, research institutes and universities worldwide. These amplifiers are used in precision engineering, electronics, physics, optics, chemistry, (aero-)space engineering, automotive, and metrology and control. In addition, Falco Systems supplies its amplifiers as sub-modules to other OEMs. For more information, please visit www.falco-systems.com.