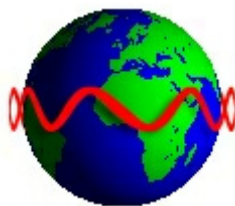


Ultrasonics World Group



Ultrasonic World LLC

www.UltrasonicsWorldGroup.com
www.mastersonics.com
www.mpi-ultrasonics.com
UWG@UltrasonicsWorldGroup.com
mpi@mpi-ultrasonics.com
Phone: +41- (0)-32-9314045

Marais 36
2400, Le Locle
Switzerland
mpi@bluewin.ch

NEW UNIVERSAL ULTRASONIC GENERATORS

Information about new Ultrasonic World Generators is here (web links):

http://mastersonics.com/documents/mmm_basics/mmm_power_supplies/AMMM/ALL-welding-generators/controls%20and%20regulations%20of%20welding%20generators-latest.pdf

<http://www.mpi-ultrasonics.com/wg-generators.html>
<http://www.mpi-ultrasonics.com/generators.html>

http://mastersonics.com/documents/mmm_basics/mmm_power_supplies/AMMM/ALL-ammm-generators/controls%20and%20regulations%20of%20ammm%20generators-latest.pdf

- 1. Our** ultrasonic power supplies are compatible or easily modifiable to drive almost any piezoelectric ultrasonic transducer presently used/known in High Power Ultrasonics Industry, operating between 15 and 100 kHz (or wider) (of course, modifications in critical and demanding cases should be made in our labs). The same generator can operate on any frequency between 15 and 100 KHz (digital software settings, easy frequency selection in any range, and easy frequency window selection in any range).
- 2. We** have the largest and modifiable frequency-window controls (almost any frequency interval, compared to 1 until 2 kHz from competition).
- 3. We** can replace almost any industrial ultrasonic power supply that is presently available from well known worldwide producers, including generators for metals welding, atomizing, ultrasonic sieving, cutting etc. (of course, not immediately, but still after a very short time after we get necessary information from a client).
- 4. Our** ultrasonic power supplies are using advantages of dynamic load power regulation between series and parallel resonance (capturing even wider frequency intervals). We can operate any piezoelectric, ultrasonic transducer in its resonant, fixed frequency regimes, in any numerically selected operating frequency interval, and in many forced, arbitrary frequency-modulated wideband regimes. Our generators are much better in many aspects when compared to the well-known ultrasonic generators from others. Our generators can be used on

the same way as any other ultrasonic generator, and on many other unique ways. All presently known industrial and manual control options are available (manual, LCD front panel settings and controls, analog, PLC... Everything can be arranged as any other producer (or user) of ultrasonic generators is doing).

5. We implement (safe operating) internal scanning procedure in order to select the optimal operating regime and settings for certain ultrasonic transducer.

6. If ultrasonic tool/sonotrode/load is operating in a very large temperature range (from – 300°C until +1000°C), resonant frequency of such system could change for several kHz. Our ultrasonic generators can make automatic frequency, amplitude and power tracking in such situations.

7. If a user would make mechanical corrections on a sonotrode (for instance cutting blade sharpening), this will change resulting resonant frequency, but our generator can still track it in a much wider frequency range compared to any other ultrasonic generator from competitors.

8. Our Ultrasonic Power Supplies have smooth power and amplitude regulation. We are applying limitation of maximal load power, maximal transducer amplitude and maximal output voltage on piezoceramics. We are applying overheating, short-circuit, over-current and over-voltage protections.

9. We can produce customized ultrasonic power supplies without power limitations (from 100 W until 100 kW, operating until 100 kHz or higher).

10. Our standard line of Ultrasonic Power Supplies is operating on European main supply voltage input, being tolerable to input voltages from 200 Vac until 240 Vac, 50/60 Hz. We can easily produce the same Power supplies for other input voltages (115 Vac 50/60 Hz). Internally, all of our standard Ultrasonic Power Supplies have stabilized, universal voltage SMPS for control and logic modules operating from 95 to 265 Vac. We can also (optionally) apply high power PFC input for customized Power Supplies.

11. We have the largest number of settings regarding operating parameters and conditions controls, frequency modulations, forced and/or automatic resonance-regimes driving, applicable for all presently known Industrial Ultrasonics Applications (such as welding, cleaning, sonochemistry, materials processing, ultrasonically assisted metallurgy, bonding, sieving, cutting, machining, atomizing, driving multi-frequency & wideband transducers etc.). Nevertheless, it is good to know that the biggest challenge in operating different ultrasonic loads (and transducers) is related to the fact that all electrical adjustments and settings are completely related to properties of mechanical system we would like to drive. The same transducer (with different mechanical loading) can produce different output power at the same output voltage and frequency. In certain cases, it is necessary that the first-time modifications and settings be made in our labs. Systematically we are converging to design solutions for ultrasonic power supplies, which are close to universal, but there will

always be a space when client will need our assistance. Until present, nobody is offering such options. In addition, we have internally adjustable compensating, inductive and capacitive components, adjustable voltage outputs etc.

12. Our Ultrasonic Power Supplies have all kind of modern industrial control options (PLC, PC software controls, LabView, ModBus, USB, analog input controls...). We can customize and introduce any other control option. Our ultrasonic generators can be controlled with:

- any kind of PLC
- analogue control signals from 0-10V
- amplitude variable and discrete signals
- on/off switching, error signals, etc
- or with RS485 based communications (we are giving the communication protocol).

13. Once after optimal settings are made (on certain of our ultrasonic power supplies, and for certain converter), there is almost no need to do anything more. Just use it on a usual way as using any other modern ultrasonic generator, and control only basic parameters (like timing, amplitude, energy etc.). There is no more need to use Lab View software controls.

14. No need for using computer... Generators can operate without externally connected computers (like any other generator from competitors). Of course, when somebody is using computer (to control our generators), this will be an excellent tool for learning, training, R&D, factory settings... but not necessary. Any other control can be used (available): We are presently using windows XP (or Windows 7, compatibility mode with XP...). Computer is good mostly for internal factory operations before generator is sent to end users...

Information about new Ultrasonic World Generators is here (web links):

http://mastersonics.com/documents/mmm_basics/mmm_power_supplies/AMMM/ALL-welding-generators/controls%20and%20regulations%20of%20welding%20generators-latest.pdf

<http://www.mpi-ultrasonics.com/wg-generators.html>

<http://www.mpi-ultrasonics.com/generators.html>

http://mastersonics.com/documents/mmm_basics/mmm_power_supplies/AMMM/ALL-ammm-generators/controls%20and%20regulations%20of%20ammm%20generators-latest.pdf

Literature (web link):

[Piezoelectric Transducers Modeling and Characterization \(e-book\)](#)

http://bookstore.mpi-ultrasonics.com/index.php?main_page=product_info&products_id=165

http://bookstore.mpi-ultrasonics.com/index.php?main_page=product_info&cPath=48&products_id=165