



HARMONICS LIMITED
The GreenWay to Sustained Energy Savings
by Jefferson Electric

Now, get unparalleled reliability from your paralleled generator system.

With GenMax, be confident knowing your backup generator system has the capacity to perform when you need it most.

Today, critical loads and volatile weather put outsized pressure on backup generator systems to perform in tough conditions. However, even the most robust multiple parallel generator configurations risk failure from another source—3rd harmonic currents.

Third harmonic currents wreak havoc when multiple generators in a parallel configuration each have a slightly different winding pitch. The resulting 3rd harmonic voltage differential among the generators forces the connection wires (and particularly the ground wire) to carry large amounts of 3rd harmonic currents.

These capacity-wasting currents cause the ground fault shunt-trip breaker to open long before each generator reaches full load capacity. The result? Compromised generator performance, right when you need it most.

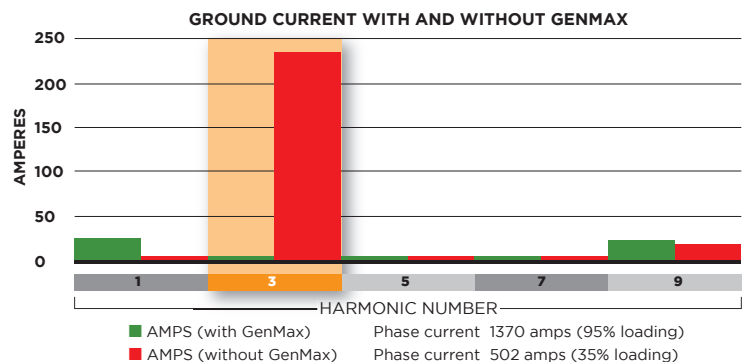
The solution is GenMax. Using patented Harmonic Suppression Technology (HSS) from Harmonics Limited, GenMax prevents the flow of 3rd harmonic ground current while still maintaining ground continuity at 60 Hz. With GenMax, damaging 3rd harmonic currents are minimized. Capacity is restored, and your generators can fully support critical loads when disaster strikes.



GenMax in Action

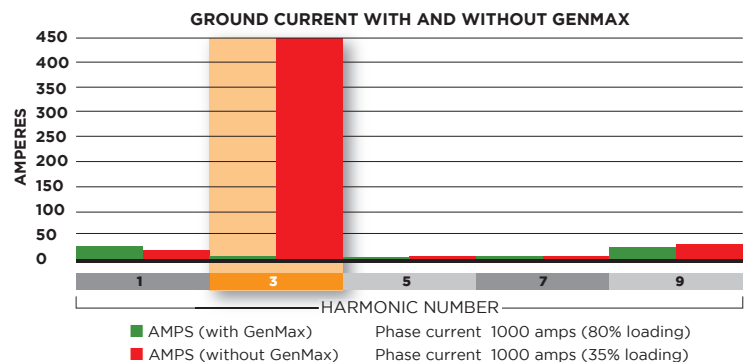
Stanford University/California

Problem: When a new 1.2 mW generator was placed on line in parallel with another generator, the ground current was over 235 amps at 35% load. Attempts to increase the load resulted in the ground fault breaker on the new generator tripping due to excessive ground current. **Solution:** Applying a GenMax reduced 3rd harmonic ground current on the new generator to under 5 amps, and 100% loading was easily achieved.



Dade County/Wisconsin

Problem: A 1050 kW generator was added to two 820 kW generators operated by the Dade County Public Works Department. Soon after, the 3rd harmonic ground current of 450 amps tripped the ground-fault breaker on the new generator. **Solution:** Applying a GenMax reduced 3rd harmonic ground current on the new generator to under 10 amps, and no further breaking occurred.



With GenMax:



- Generator capacity and reliability are restored in both Delta (3-phase, 3 wire) and Wye (four wire) configurations.
- Parallel generators (and all conduits, neutrals and grounding systems) can be properly sized.
- The NEC (2008) mandate requiring full load testing of critical system loads can be achieved.



Easy installation. Immediate results.

GenMax is easy to install. What's more, the benefits of restored capacity and reliability are immediate.

- 3rd harmonic currents circulate in the grounding system and phases of delta connected generators
- 3rd harmonic currents circulate through the neutrals, all phases and in the grounding system of wye connected generators
- GenMax eliminates the flow of 3rd harmonic current

GenMax is sized to the generator kW and the connected load (delta or wye).
Standard size range is 150kW to 2000kW with voltages of 600, 480 and 208.

The Harmonics Guarantee

Harmonics Limited products are warranted to be free from defects in materials and workmanship under normal use and service for a period of five years from the date of purchase. Our products are UL certified. We are proud members of the U.S. Green Building Council. www.usgbc.org.

Visit **www.HarmonicsLimited.com** or
call 1 (800) 892-3755 to speak with a
GenMax sales representative today.



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