

eBoost™

Guaranteed Higher UPS Efficiency

Energy consumption is a critical issue for IT organizations as their data center energy demands continue to grow. Their goal is to reduce cost and keep the datacenter running.

*IT organizations can reduce energy consumption and costs—without sacrificing reliability—with GE's **eBoost** technology.*

Technology breakthroughs

- Up to 99% UPS efficiency
- Compliant to ITI (CBEMA) curve during undervoltage events
- Up to 3 MVA UPS capacity using Redundant Parallel Architecture (RPA)
- Magnetizing the output transformer ensures a < 2ms transfer time
- Static bypass inductor for filtering utility power
- Battery trickle charge in **eBoost** operating mode

What is eBoost?

- e = high efficiency (up to 99%)
- Boost = fast power transfer (<2ms)



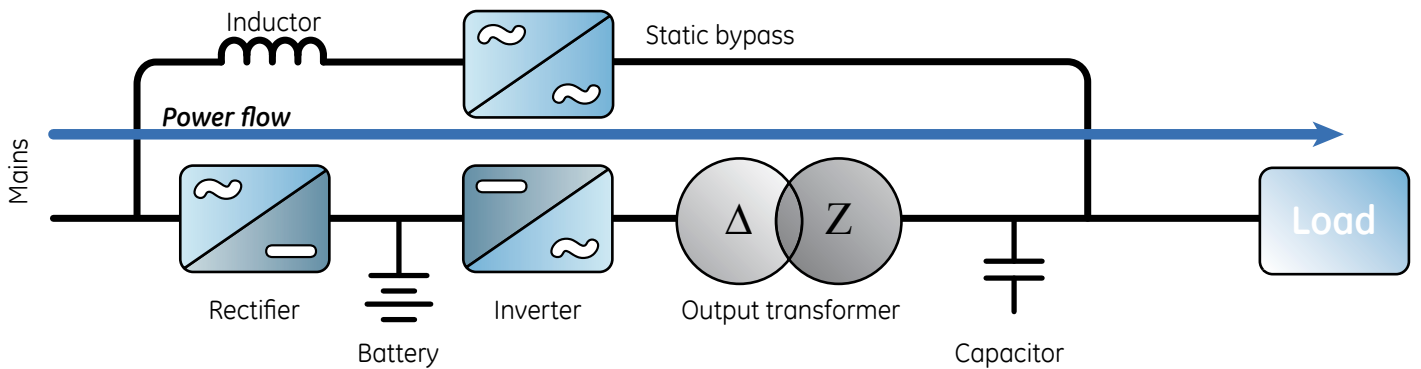
imagination at work

eBoost

Customer benefits

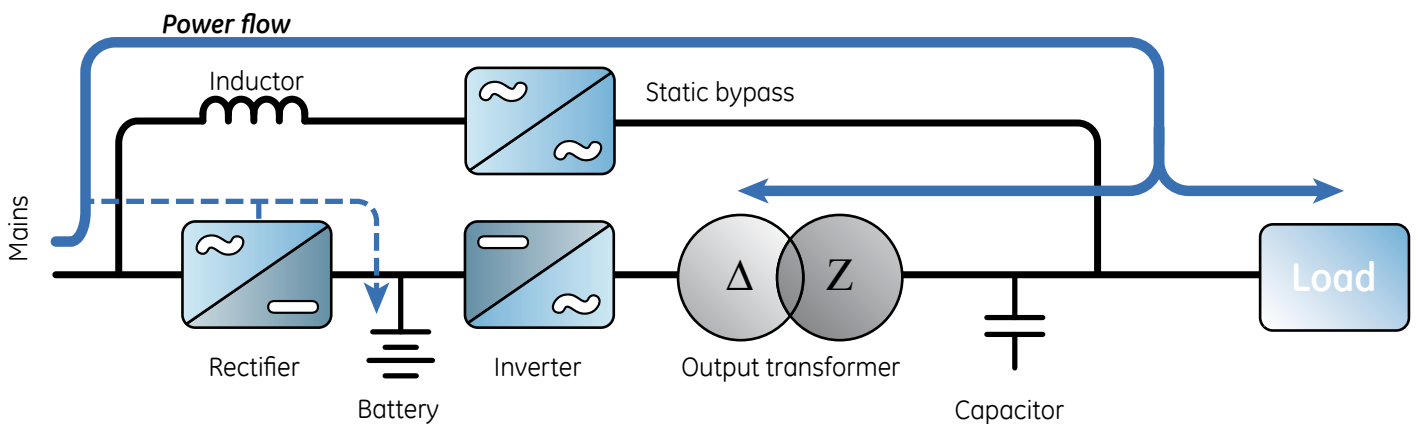
- 80% reduction in UPS losses
- System energy cost savings
- Reduced heat (BTU) generation
- Energy savings from reduced cooling
- Extended UPS component life
- User-programmable scheduling
- Reduced acoustical noise

double conversion



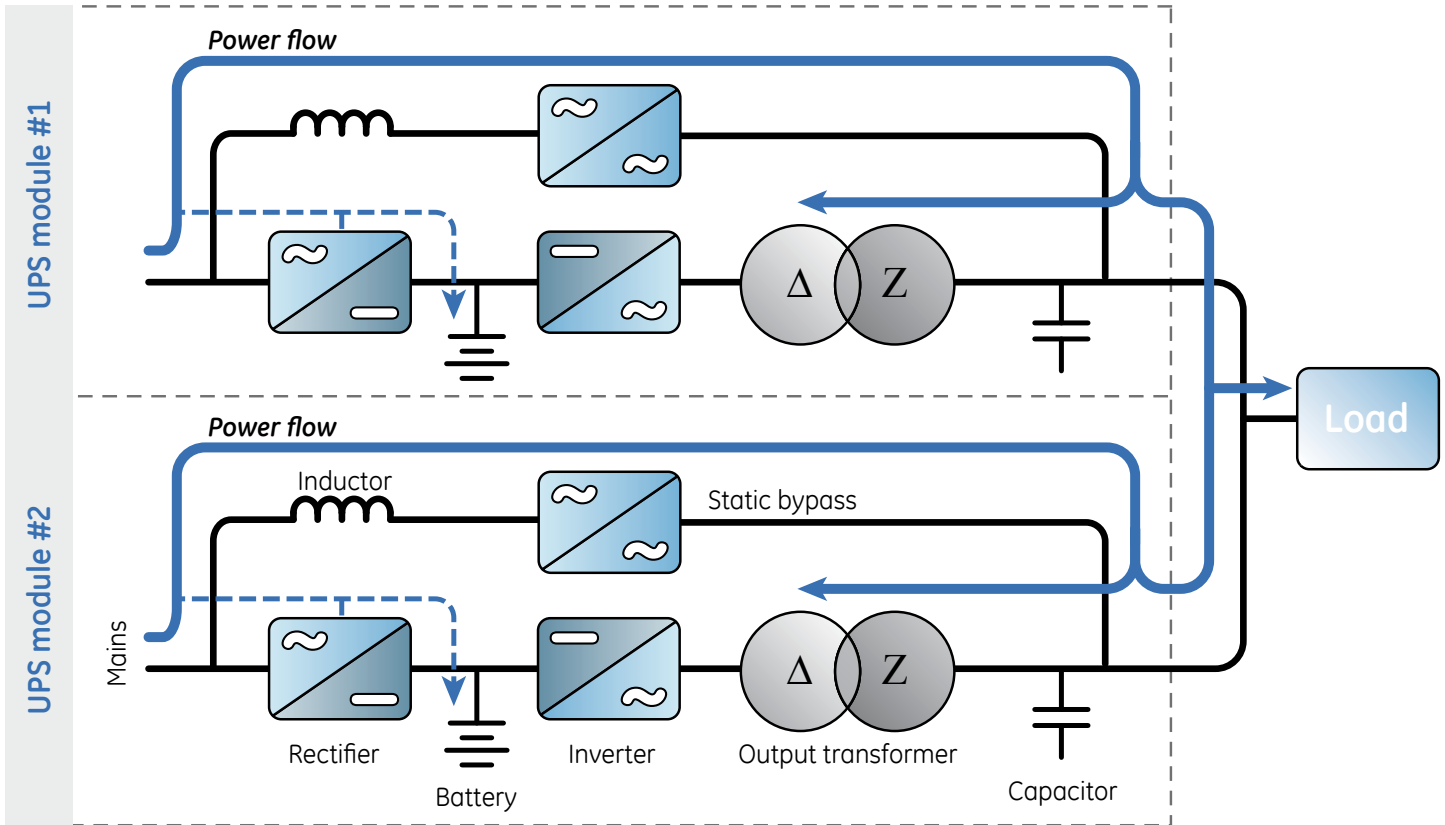
During traditional operation the UPS runs in double conversion mode. Both the rectifier and the inverter are continuously operating, resulting in an efficiency of 92-94%.

eBoost single module



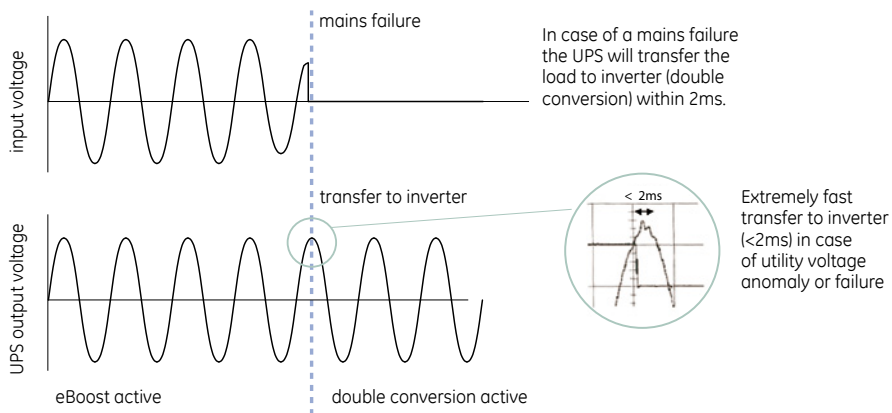
During **eBoost** operation the load is supplied directly by the mains, via the static bypass circuit. This provides an efficiency up to 99%. In case the mains voltage is out of tolerance, the UPS will immediately transfer the load to the inverter in < 2ms. The < 2ms is achieved by our patented* technology to magnetize the output transformer. The output transformer provides galvanic isolation between inverter and load. The static bypass inductor filters the input AC power during **eBoost** operational mode.

eBoost in Redundant Parallel Architecture (RPA)



eBoost in RPA uses high speed communication and fast digital signal processors (DSP) to parallel up to 6 UPS modules. **eBoost** in RPA provides up to 3 MVA capacity and up to 99% efficiency while maintaining < 2ms transfer time, compliant to the ITI (CBEMA) curve.

eBoost performance



Specifications

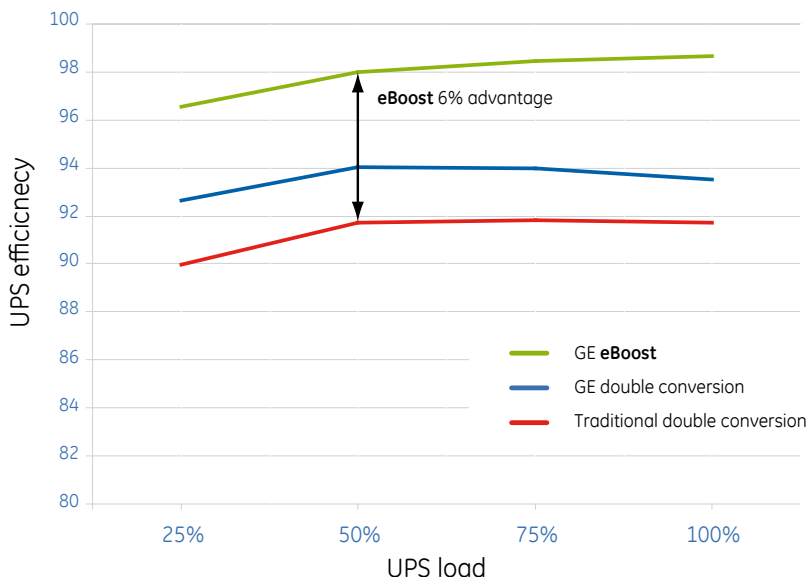
On SG Series UPS products 160-500kVA single module and Redundant Parallel Architecture (RPA) operation:

Transfer time	: < 2ms
Input voltage range	: ± 10%
Input frequency range	: ± 2%
Efficiency	: up to 99%

eBoost efficiency

eBoost provides operating efficiencies up to 99% and is 6% more efficient, on average, across the load range than traditional double conversion UPS operating at less than 92%.

UPS efficiency comparison



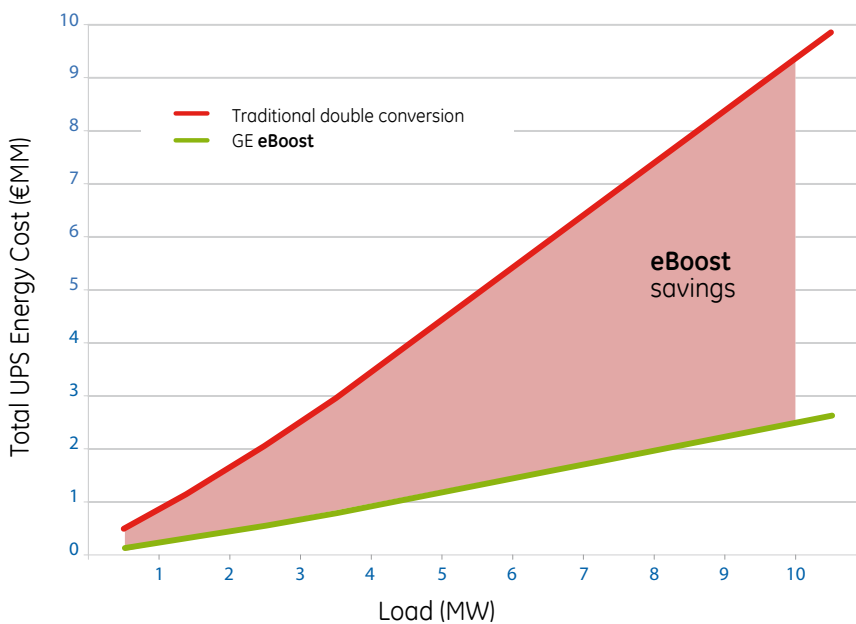
eBoost savings

eBoost operation provides considerable energy life cycle cost savings ranging from €0.5MM to €7MM.* Savings are dependent upon load, power costs and life cycle duration (years).

* Assumptions:

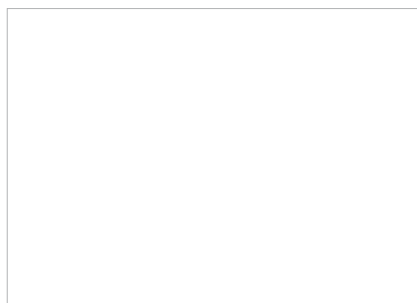
- Power cost - €0.10/kw-hr
- Operating hrs/year - 8,760
- Configuration = S+S operating at 50% capacity

Data center life cycle cost (10 years)



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