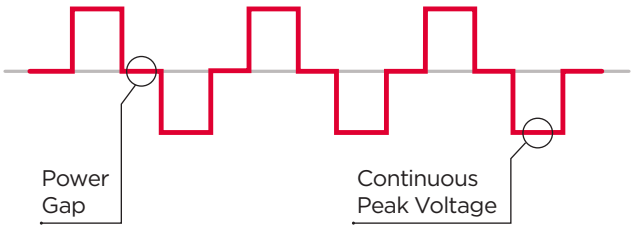
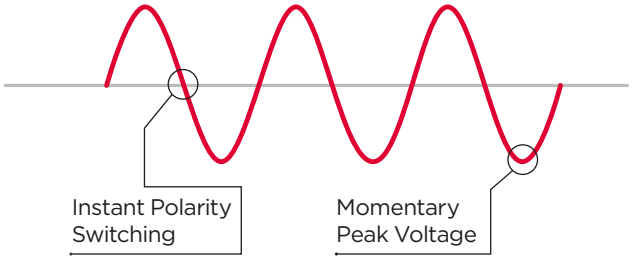
THE IMPORTANCE OF **ACTIVE PFC** AND **SINE WAVE POWER**

FIGURE A: SIMULATED SINE WAVE



A modified sine wave (square wave) dwells on peak voltage within each cycle, and on zero voltage when switching polarity. Those lag times are too short for human perception, but potentially long enough for an Active PFC circuit to sense a problem and shut down unexpectedly.

FIGURE B: SINE WAVE



A sine wave never stays at one point in the cycle. It has instantaneous zero voltage when switching polarity and only momentary peak voltage.

ACTIVE PFC

Today's high-end PCs, servers and IT equipment often contain power hungry, high performance processors, graphics cards and internal components. To meet these demanding specifications and to improve energy efficiency, leading manufacturers are switching to power supplies with active power factor correction (Active PFC).

SINE WAVE POWER AND ACTIVE PFC

Equipment including power supplies with Active PFC circuits can be sensitive to changes in input power. When this type of equipment is connected to a UPS system with simulated sine wave output, unexpected shutdown may occur resulting in data loss or equipment damage.

Shutdown can occur because simulated sine wave output has a power gap in each cycle. When the UPS system switches to battery current, a power supply with an Active PFC circuit may detect that power gap and shut itself down. See Figure A above. UPS systems that deliver sine wave output prevent these unexpected shutdowns by not having these "power gaps." See Figure B.

ENERGY STAR® RATING

Leading manufacturers often indicate high-efficiency, Active PFC power supply products with an ENERGY STAR® rating. This designation indicates a highly-efficient product and generally uses 20-30% less energy than required by federal standards. And many federal, state and educational institutions specify that new PCs have ENERGY STAR ratings.

RECOMMENDATIONS

A CyberPower PFC Sinewave UPS System provides sine wave power to protect Active PFC and ENERGY STAR compliant PCs, workstations, networking hardware and servers. To match a UPS system to your current and future requirements, contact you CyberPower Systems Representative or visit our website.

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