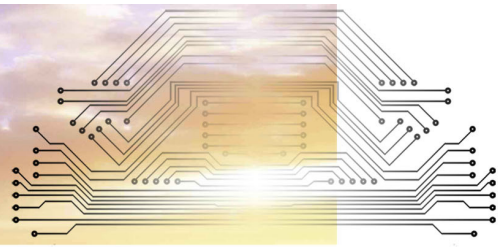


80 PLUS[®]



80 PLUS[®] POWER QUALITY

www.80PLUS.org

info@80PLUS.org

1.877.4.80PLUS

What is the 80 PLUS[®]?

80 PLUS is an innovative, electric utility-funded incentive program to integrate more energy-efficient power supplies into desktop computers and servers.

The 80 PLUS performance specification requires power supplies in computers and servers to be 80% or greater energy-efficient. This makes an 80 PLUS certified power supply more than 33% more efficient than current power supplies.

What are Power Supplies?

Power supplies are the devices that power computers and servers. They convert AC power from utilities into DC power used in most electronics.

Visit www.80PLUS.org for a list of participating system integrators and manufacturers.

Power Quality Service Center

Contact PQSC for more information about power quality issues.



1.800.555.7697

info@pqsc.org

www.pqsc.org

Power Supply Research

www.efficientpowersupplies.org

80 PLUS[®] Eliminates Computer Power Quality Issues at the Source

The widespread adoption of desktop personal computers has made power quality issues more visible than ever before. Typical computer power supplies have low power factor (0.5 – 0.6) and high total harmonic distortion (above 100%), which can cause the overheating of building wiring and transformers. The most common practices to lessen the heating effects of harmonics are to oversize the conductors and use K-rated transformers. All of this adds to the cost of a building's electrical system, which in turn adds to the total cost of computer ownership.

Benefits of Improved Power Quality

- Higher power factor reduces current draw and allows more computers to be operated on the same branch circuit without the need for costly electric infrastructure upgrades.
- Lower triplen harmonics place less stress on neutrals and increase the life of distribution transformers.
- In new construction situations, smaller and less expensive distribution systems can be constructed when 80 PLUS computers are considered in the planning process.

Research by the Electrical Power Research Institute (EPRI) suggests that it is most cost-effective to solve the power quality problem at the source with high power factor plug load devices. The example below demonstrates how 80 PLUS power supplies reduce phase and neutral currents through better power factor and lower total harmonic distortion, in turn lowering the total cost of computer ownership by potentially hundreds of dollars per unit.

Figure 1.
Standard Power Supply

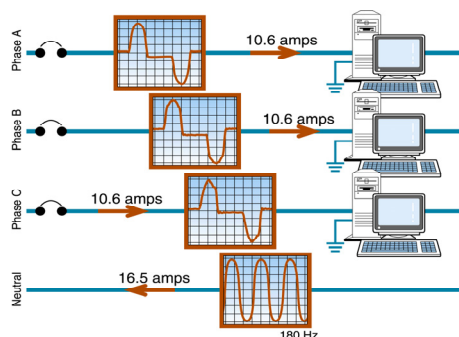
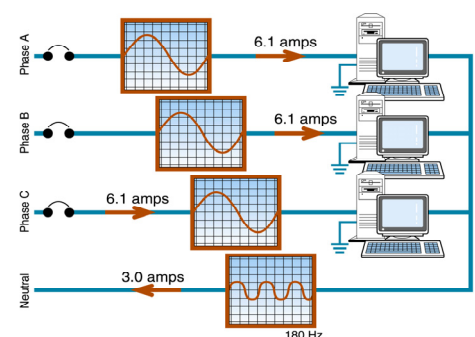


Figure 2.
80 PLUS Certified Power Supply



Phase and neutral currents are shown for 10 PCs per 20-amp circuit. Power consumption of monitors is not included. Improved efficiency and power quality in the 80 PLUS PC reduces the phase currents by over 40% and the neutral currents by over 80%. (Figures provided courtesy of EPRI Solutions, Inc.)