Industrial Control and DAQ systems

There are many different types of Industrial Control systems. These range from extremely complex and high speed programmable controllers that keep major production lines rolling to simple bang-bang thermostatic controllers maintaining temperature in a thermal test chamber. For our purposes we will only consider those Industrial Control systems which are based on the processing power of a personal computer (PC). These systems are often referred to as PC-based control systems and are a subset of the overall larger PC based data acquisition and control market.

One of the things that differentiates an Industrial Control application from the generic DAQ system is the industrial reference. While many PC based systems are developed for scientific and laboratory applications, many are not suitable for the more challenging requirements for a typical industrial application. Some of the main differences are:

- Industrial systems frequently need to perform in a harsh environment while many laboratory systems need only deal with a very benign office environment.
- Industrial systems may require many more I/O points than a typical laboratory automation project would require.
- Down time in these systems can be extrordinarilly costly so these system may need to be designed with higher MBTS and/or short Mean Time to Repairs.
- An Industrial system may require "real-time" performance, or at the very least much lower I/O latency times as there may be many other functions in line that are totally dependent upon the timely completion of a previous task
- An Industrial control application may require the ability to control heavier, more powerful equipment and may be called upon to provide or be able to switch higher voltages and currents.

UEI's PowerDNA Cube is an ideal solution in a wide variety of Industrial Control applications. In addition to its excellent performance as an I/O subsystem slaved to host computer, the embedded Linux capability of the cube sets it apart as an I/O system that can also function as a stand-alone controller.