

MACHINE DESIGN

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USB CAN CONNECT THE WORLD

The ubiquitous serial and parallel ports on computers, known as RS-232 and Centronics, may soon be replaced by a single Universal Serial Bus. The USB is a serial bus standard developed by industry leaders DEC, Northern Telecom, Compaq, IBM, Intel, and Microsoft. USB peripherals attach to ports on the PC, eliminating the need to install cards into dedicated computer slots. USB-equipped computers will automatically configure peripherals as soon as they are connected without rebooting the computer or running setup programs.

"Because USB is a low-cost, high-performance, high-reliability bus with industry-wide backing, it is certain to become a standard machine bus," says Jacob Tal, president and co-founder of Galil Motion Control, Mountain View, Calif. "Most growth for the USB will come from migration of the ISA, PCI, and proprietary bus users."

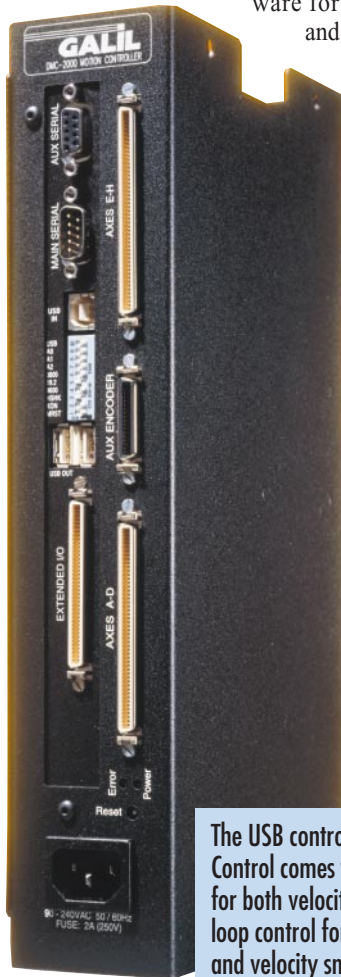
Galil committed to the bus by developing a new DMC-2000 motion controller, available in one to eight-axis formats which control step and servomotors on any combination of axes. The controller provides a variety of communications options including the new USB, RS-232, RS-422, and RS-485 protocols up to 115k baud. Nonvolatile memory for application programs, variables, and arrays operate without a host computer. Multitasking lets up to eight ap-

plication programs execute simultaneously. A variety of software is available for quick and easy setup, automatic servo tuning, and interface with ActiveX tools. Also, software for DOS, Windows 3.1, 98, and NT is available as well as

a complete library of function calls for C/C++ programmers.

The DMC-2000 also includes sinusoidal commutation for brushless motors, two encoder inputs for each axis, 96 configurable I/O, and forward and reverse limits and home inputs for each axis. Modes of motion include independent axis positioning, linear and circular interpolation, contouring, and electronic gears and cams where multiple sets of coordinated axes operate simultaneously.

—John R. Gyorki



The USB controller from Galil Motion Control comes with PID and feedforward for both velocity and acceleration, dual-loop control for backlash compensation, and velocity smoothing to minimize jerk. The DMC-2000 controls most modes of motion, including point-to-point, jogging, contouring, and electronic gearing. It also handles linear and circular interpolation with continuous vector feed and coordinated motion with third-axis tangent.

Test and measurement products

Palo Alto, Calif. . . . To help customers stretch budgets, **Hewlett-Packard Co.** has listed end-of-production equipment and more than 1,200 refurbished test and measurement products on the World Wide Web at www.hp.com/go/refurbished.