



DxMTM
TECHNOLOGY

&



DxI/OTM
TECHNOLOGY

New, game-changing Ether**CAT**[®] technology for servo motion and I/O control that reduces cost, increases flexibility, and upgrades performance.

DxMTM and DxI/OTM technology is the new EtherCAT[®] embedded machine control system standard and raises expectations to a new level.



DesignNews
Automation and Control :
Drives Category
2012 Golden Mousetrap
AWARD
Winner

DxM™ & DxI/O™ Technology Features

ADVANCED Motion Controls® provides products for the fastest, most flexible form of industrial Ethernet control - EtherCAT®. High speed, deterministic control with standard 100 base-T hardware, EtherCAT is industry proven to achieve blazing fast, consistent results in demanding applications. By leveraging overall flexibility and maximizing performance of EtherCAT, DxM™ & DxI/O™ (Demultiplexed Motion and I/O)

Technologies allow a single EtherCAT slave node to accommodate a combination of up to 4 axes of motion, 128 digital inputs, 128 digital outputs, 16 analog inputs, and 8 analog outputs for complete motion and

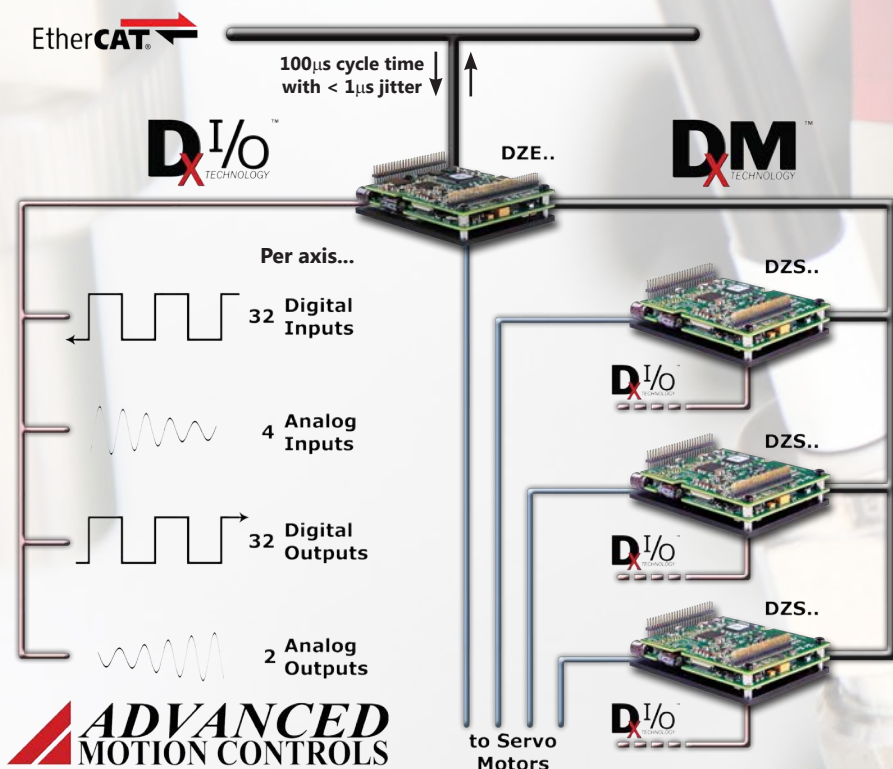


machine control. The servo drives themselves are an embedded, plug-in module form factor known as 'Z-Drives'.

This family of products has already been recognized by experts and used by OEMs with complete success. Acclaimed for high installed power density, these servo drives are available over a wide power range. This unique achievement significantly lowers system costs and covers a majority of possible OEM applications.



Optimum System Example: A single EtherCAT® slave node solution with 4 Axes of Motion and up to 280 Inputs and Outputs

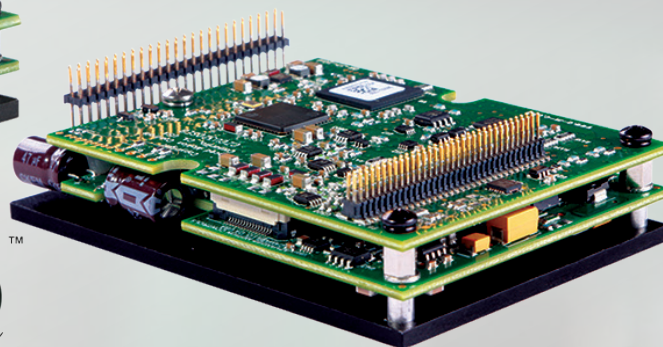
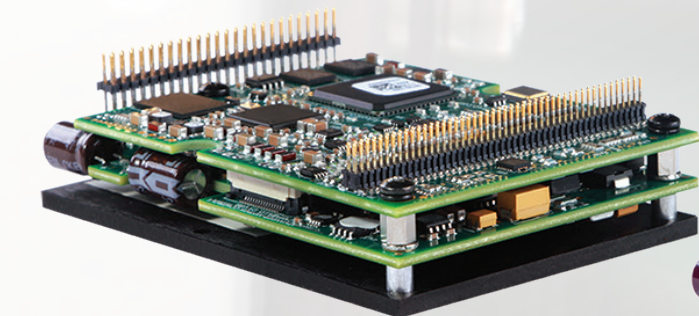


Typically, EtherCAT® systems have been on larger machines such as printing presses, packaging lines and large in-place robotic systems that can accommodate sizeable control systems enclosures. With **ADVANCED Motion Controls®** DxM™ and DxI/O™ Technologies, application solutions are now available for smaller machinery and desktop equipment like water jet cutters, routers, lab automation equipment, biotech processing equipment, smaller mobile robots, etc. where panel space is a premium or not at all available.

- CoE (CANopen over EtherCAT®) device profile based on drives and motion control standard DS-402
- Programmable PDOs allow up to 16 receive and 16 transmit objects per drive per EtherCAT cycle - 64 of each on a 4-axis system
- All expandable I/O accessible via network PDOs
- Watchdog monitor for network communications
- Cycle times down to 100 µs with jitter under 1 µs - including up to 4 axes & 280 I/O points
- Profile and Cyclic Synchronous Current, Velocity, and Position Modes
- Compatible feedback types: 5V TTL Encoder, 1Vpp Sin/Cos, Heidenhain® or EnDat® absolute encoders
- Supply voltage ranges of 20 to 175 VDC with up to 40 A peak current output, additional designs available
- Compact PCB mount servo drive package - 88.9 x 63.5 x 20.1 mm (3.5 x 2.5 x 0.8 in)



EtherCAT®



DM™
X TECHNOLOGY

& **DxI/O**™
X TECHNOLOGY

EtherCAT®



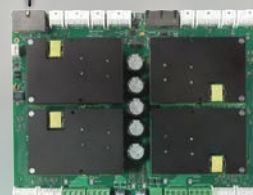
EtherCAT®



EtherCAT®



EtherCAT®



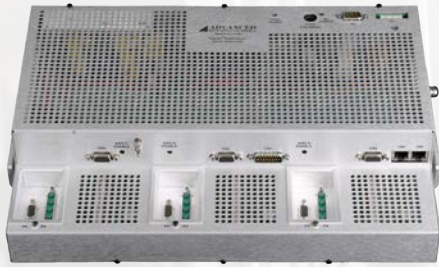
Expected single axis EtherCAT® control for servo motion, drive status and feedback is achieved at a rate of 100µs. In the same time it takes to command a single axis, DxM™ and DxI/O™ Technology allows you to expand control to over 4 axes of motion plus an additional 280 I/O points while still maintaining the same 100µs update rate! Unmatched performance at any price. Yet, this less expensive, unbeatable solution is not available anywhere else!

Significant cost savings is achieved because only one EtherCAT® slave node is needed to control up to 3 less expensive sub-nodes (DxM™ Technology). Additional cost savings come from eliminating the need for expensive 3rd party network I/O modules (DxI/O™ Technology). In fact, interface boards can be tailored to fit the equipment, further reducing cost and space. Exclusive technology only from...

ADVANCED
MOTION CONTROLS

DxM™ and DxI/O™ Technology delivers peak performance and offers scalability only previously found in larger, customized, highly dedicated industrial machines. This enabling technology provides new, flexible, cost effective and embedded solutions benefiting both small and large OEMs in applications such as:

- Semiconductor Robots
- Rapid Prototyping Machines
- Mobile and Vehicular Platforms
- Lab Automation Instruments
- Assembly Automation
- Packaging Lines
- Medical & Healthcare Equipment
- Metrology Devices
- Electronic Assembly
- ...and many, many others



ADVANCED Motion Controls® also has the ability to design, build, and support DxM™ and DxI/O™ custom designs as if they were standard products. Our engineers will work closely with your own team to create a product that will utilize *ADVANCED* Motion Controls' vast knowledge and industry experience while meeting the exact "form, fit, and function" requirements of your application.

Existing successful custom design solutions include the 230 VAC input, 3-axis drive control, multiple power level, DxM™ enabled platform shown above, and the 3-axis DxM™ and DxI/O™ motion and machine control system shown to the right. Our flexibility and in-house design and manufacturing capabilities allow us to build directly to OEM specifications - faster and more reliably than anyone else. As an extension of the OEM's engineering team, *ADVANCED* Motion Controls is the ultimate motion control partner.



ADVANCED Motion Controls® EtherCAT® products consist of panel mount and plug-in servo drives to allow for quick prototyping and ease of system integration. Extending the popular DigiFlex® Performance™ product line, our EtherCAT servo drives provide for multiple feedback devices in a variety of power platforms. Panel mount DPE drives serve as nodes in single or multi-axis EtherCAT networks, while plug-in DZE/DZS drives utilize *ADVANCED* Motion Controls' unique, proprietary high speed multi-axis communication interface and I/O expansion capabilities - DxM™ and DxI/O™ Technology defined.

Why wait? Contact *ADVANCED* Motion Controls® today and be prepared to astonish your customers all over again!



Everything's possible.

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