

# INTRODUCTION

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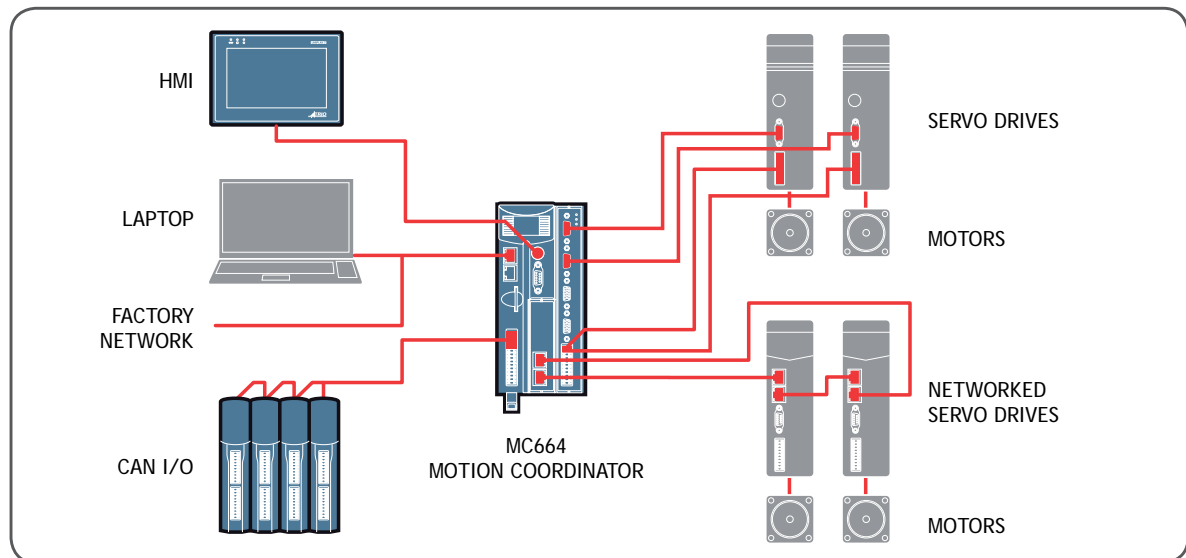


# Introduction to the MC4,5,6xx Range

The MC4 range *Motion Coordinators* are the latest in the Trio pedigree representing over 25 years of motion control experience. Run your machine faster and with greater precision with these new generation *Motion Coordinators* based on a 64 bit technology.

Choose the motor and drives to best suit your application without compromise, the MC4xx range provides interface options for traditional servo, stepper and piezo control together with many digital interfaces for current digital servo drives. Increase the flexibility of your equipment with support for up to 64 axes of motion control. Trio's tradition of modular configuration has evolved into convenient MC464 clip-on modules allowing the system designer to precisely build the configuration needed for the job.

The MC405 and MC403 share the same advanced software and hardware techniques with the MC464, but come in 2 compact and cost-effective packages for machine applications requiring lower axis counts.



*Typical System Configuration*

## TYPICAL SYSTEM CONFIGURATION

The MC4xx range supports programs written in TrioBASIC, allowing a smooth upgrade path from earlier types of *Motion Coordinator*. In addition, the standard IEC 61131-3 languages are supported, allowing both logical I/O and motion programming in Ladder, Function Block, Structured Text and Sequential Function Chart. A rich set of motion function blocks allows the programmer to have full access to the familiar Trio Motion command set.

I/O expansion is provided via a built-in CANbus interface. The built-in Ethernet port supports both the programming interface and many Ethernet based fieldbuses. These can be used simultaneously. Further fieldbus networks supporting common factory protocols are supported in the MC464 via the HMS AnyBus® adapter module.

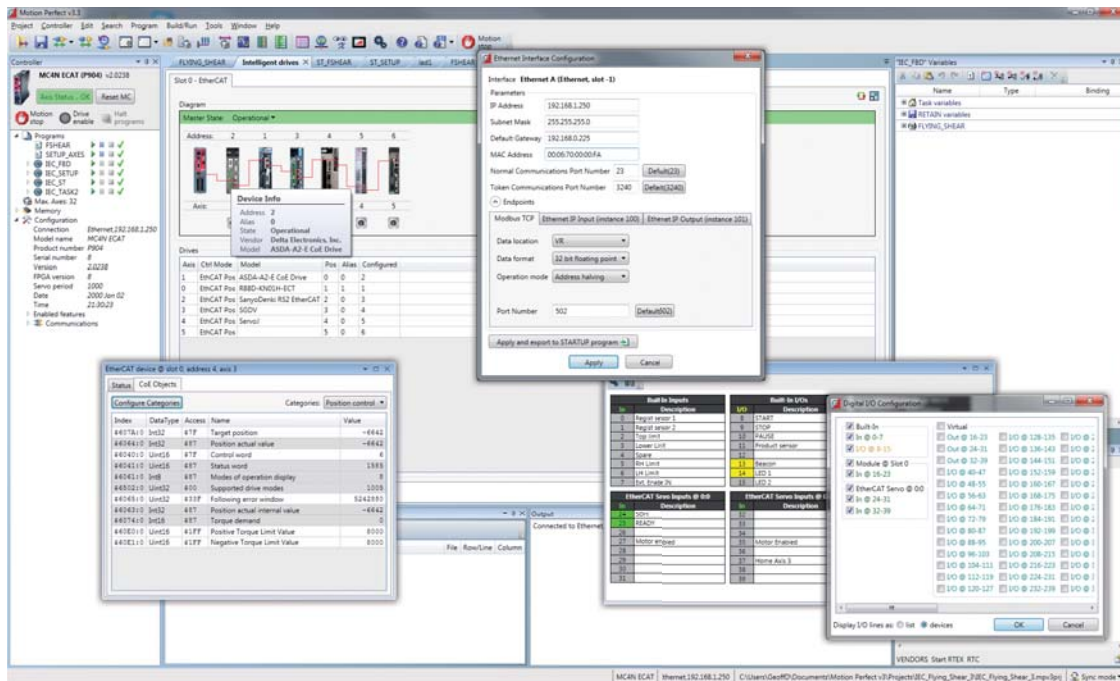
The MC664 and MC464 axis expansion modules feature many options for Drive Network interfaces, analogue servo, pulse/direction, absolute or incremental feedback and accurate hardware registration. Up to 7 half-height expansion modules or 3 full-height expansion modules can be attached. This modular approach along with Trio's feature enable code system for axis activation allows the whole system to be scaled exactly to need.

The MC4N-ECAT is dedicated to running remote servo and stepper drives via the EtherCAT real time automation bus. The MC4N-RTEX runs Panasonic Real Time EXpress drives. Versions of the MC4N-ECAT and MC4N-RTEX are available for 2, 4, 8, 16 and 32 motor axes

The MC403 and MC405 each come in 2 main variants; either 3 or 5 axis pulse+direction output, or as 2 or 4 axis servo with a single 5th axis encoder port.

## SETUP AND PROGRAMMING

To program the *Motion Coordinator*, a PC is connected via an Ethernet link. The dedicated *Motion Perfect* program is normally used to provide a wide range of programming facilities on a PC running Microsoft Windows XP, Vista or Windows 7 versions.



Motion Perfect 3

Once connected to the *Motion Coordinator*, the user has direct access to TrioBASIC which provides an easy and rapid way to develop control programs. All the standard program constructs are provided; variables, loops, input/output, maths and conditions. Extensions to this basic instruction set exist to permit a wide variety of motion control facilities, such as single axis moves, synchronised multi axis moves and unsynchronised multi axis moves as well as the control of the digital I/O.

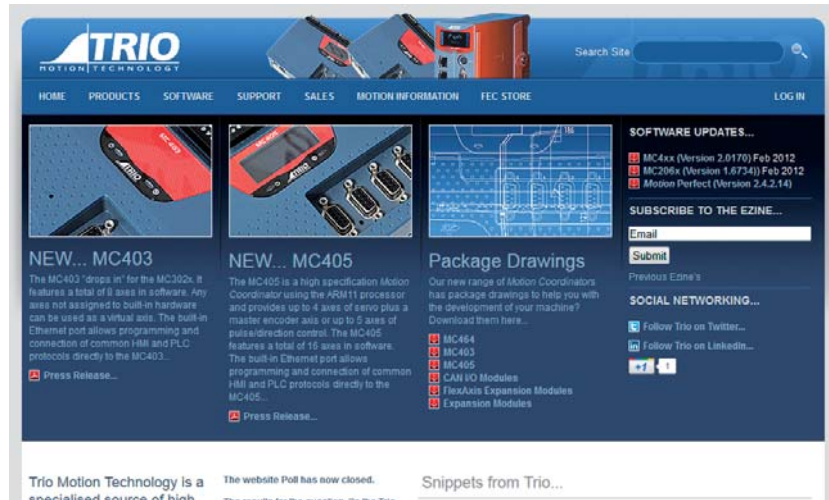
The MC4 xx range features multi-tasking TrioBASIC and the standard IEC 61131-3 language. Multiple TrioBASIC programs plus Ladder Diagram (LD), Function Block (FB), Structured Text (ST) and Sequential Function Chart (SFC) can be constructed and run simultaneously to make programming complex applications much easier. *Motion Perfect* version 3 is needed to access the full IEC 61131-3 functionality. MPv3 provides a seamless programming, compilation and debug environment that can work in real-time with any of the MC4 range *Motion Coordinators*. A motion library is provided which enables the familiar Trio Motion Technology commands to be included in IEC 61131-3 programs.

## FEATURES

- Supports digital drive systems up to 128 axis
- Based on 64bit MIPS and ARM processor technology
- 64bit position integers
- High accuracy double floating point resolution
- Multi-tasking BASIC programming
- IEC61131-3 programming support
- Motion buffers up to 64 moves
- Robotics, gears, interpolation and synchronisation built-in
- I/O expansion up to 528 I/O points
- Ethernet programming interface
- Backlit LCD display (MC664, MC464, MC4N MC508 and MC405)
- Expansion flexibility with clip on modules allowing quick interchangeability (MC664 and MC464)
- Anybus Module support allowing flexible factory communication options (MC664 and MC464)

## THE TRIO MOTION TECHNOLOGY WEBSITE

The Trio website contains up to the minute news, information and support for the *Motion Coordinator* product range.



- Website Features
- Latest News
- Product Information
- Manuals
- Programming Tools
- System Software Updates
- Technical Support
- User's Forum
- Application Examples
- Employment Opportunities

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