

PRODUCTS

The *Motion Coordinator* system is extremely modular, allowing the user to tailor the controller to their specific applications, this also allows the flexibility to incorporate new modules if the need should change, making the system “future proof”. Systems may be used with a stand alone program or alternatively commands can be sent from an external computer.

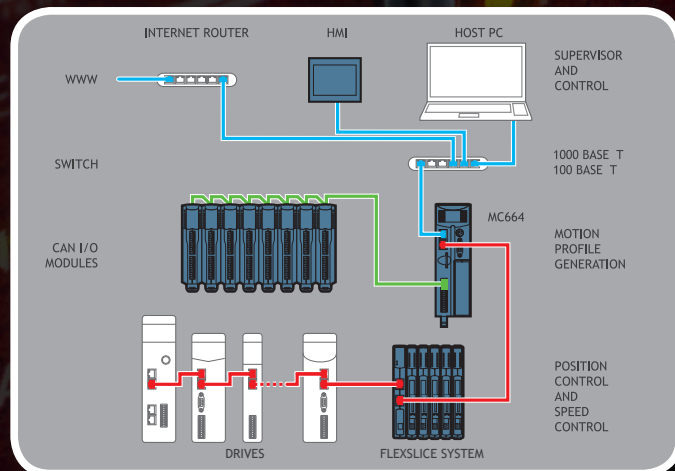
All *Motion Coordinators*, whether panel mount, rack mount, DIN-rail mount or a custom design format, allow digital or analogue I/O expansion with Trio's I/O modules. Special I/O requirements can also be accommodated using the CANopen protocol to control third party I/O modules. The Flexslice System offers fast high performance EtherCAT devices for Trio's range of EtherCAT *Motion Coordinators*.

Trio's UNIPLAY range of operator interfaces provide a robust and functional HMI using the Ethernet network. Third party HMI products, touchscreens, etc. can communicate to the *Motion Coordinator* via the Modbus-RTU serial protocol.

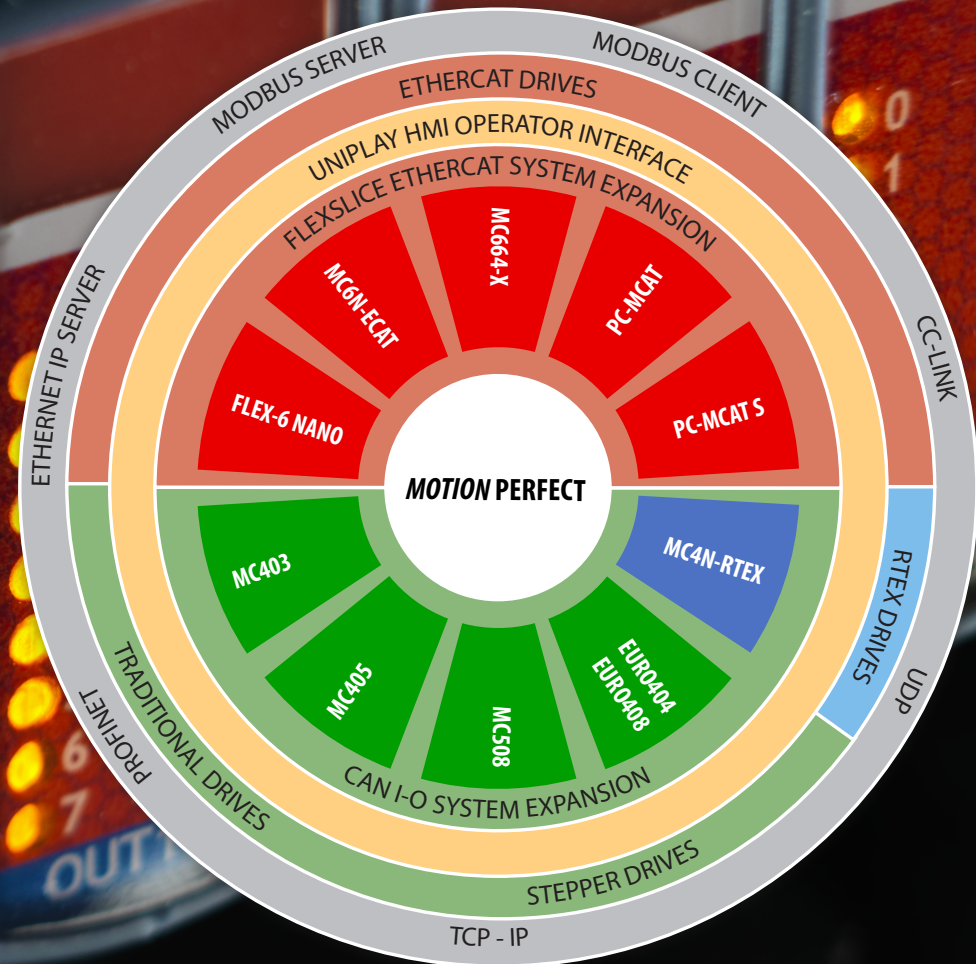
System Set-Up

The MC4/5/6 range includes advanced networking technology for connection to Digital Servos, CANbus and Factory Networks. Access to all parts of the system by network connections allows reduced down-time with automated fault reporting and analysis.

With a MC664 *Motion Coordinator*, it is possible to control a machine with up to 128 axes (64 stepper/servo and 64 virtual), 1024 digital inputs, 1024 digital outputs, 32 analogue inputs and 16 analogue outputs.



Preliminary specifications may change without notice

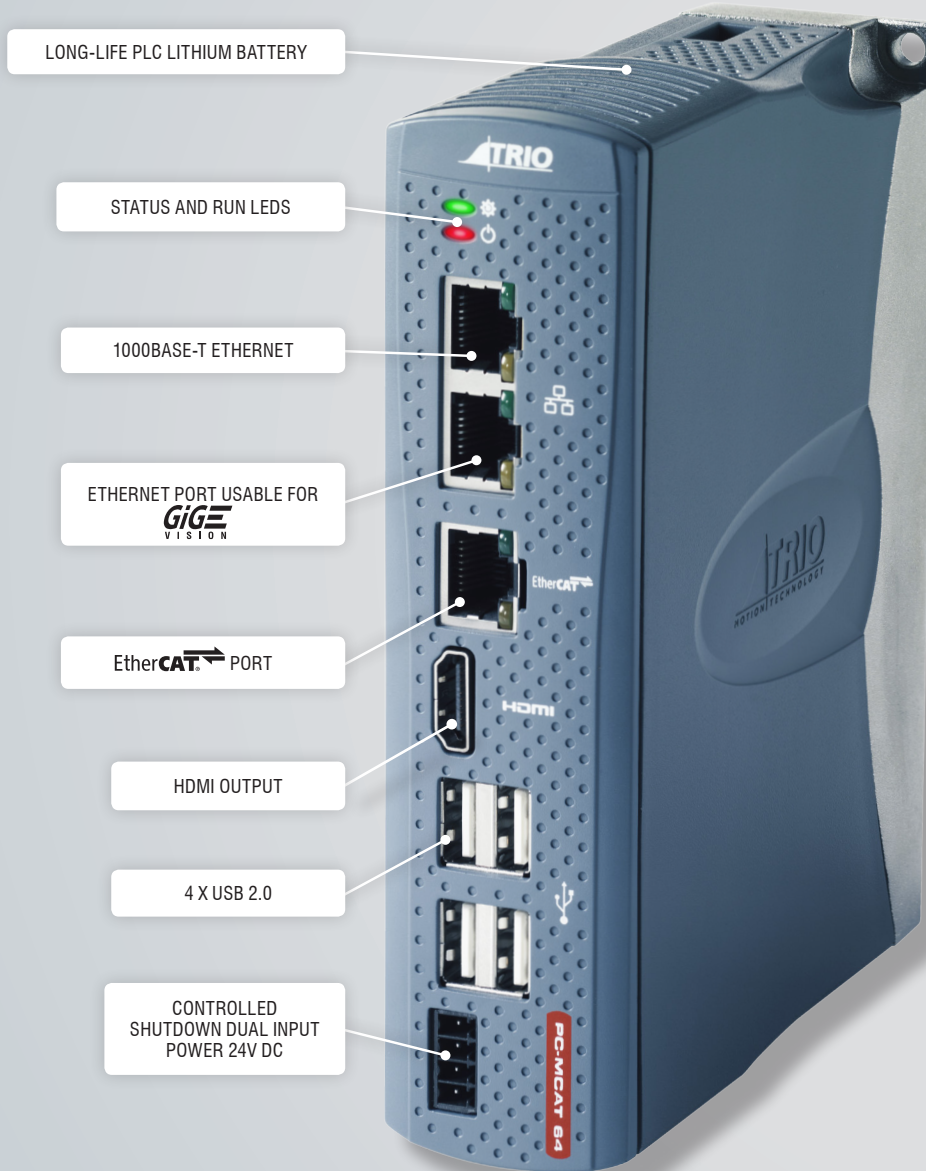


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PC-MCAT 64

64 Axis EtherCAT Motion Coordinator + PC



Trio's PC-MCAT 64 is an innovative "Motion + PC Solution". A powerful quad core Intel Atom processor is used to drive both a high performance motion controller and a compact PC that can run user applications under Windows.

The PC-MCAT software uses a real-time extension to allow both Windows and the motion controller to run directly on their own processor cores.

The motion controller's own dedicated EtherCAT master Ethernet port can launch data packets with less than 1µsec of jitter. The 1.91GHz Atom processor is paired with 4 GBytes of RAM and a high speed 64 GByte upgradable SSD to give sufficient PC performance for many machine types.

PC-MCAT is especially suitable where a machine type needs the software and hardware facilities of a PC paired with a powerful 64 axis motion coordinator. The HDMI port can be used to drive high resolution displays for sophisticated operator interfaces.

The large 64 GByte SSD drive can hold vast amounts of machine data and recipes. Two GBit Ethernet ports are built into the PC-MCAT. These can be used for factory communications or connecting vision camera(s) whose data can be processed directly on the PC cores.

A machine's PC applications can communicate with the Trio Motion Coordinator running on its dedicated processor core using fast shared memory. Machine control sequences can either be made in multi-tasking TrioBASIC / IEC61131 of the Motion Coordinator or can be written as a PC application (for example in "C") sending motion + I/O requests through to the Motion Coordinator. Trio's Motion Perfect v4 application development tool can be run directly on the PC-MCAT or remotely on a laptop via Ethernet.

FEATURES

- ★ Motion + PC Solution for Automation Machinery
- ★ Fanless compact PC with E3845 Quad Core Atom Processor at 1.91 Ghz
- ★ Powerful up to 64 Axis EtherCAT Based Trio Motion Coordinator
- ★ RTX64 Real Time Extension to allow Motion + Windows Running Directly on Their Own Processor Cores
- ★ Plug and Play EtherCAT Configuration Expandable Support for Servo Drives, I/O and Devices From Over 100 Manufacturers
- ★ Programmable In Easy TrioBASIC, built-in IEC 61131 or PC based Programming Languages Such As 'C'
- ★ 4 GByte RAM + 64 GByte Upgradable SSD
- ★ Built-in GBit Ethernet Port For Vision Cameras
- ★ RoHS and CE Approved

ACCESSORIES:

P366 - P379	EtherCAT Flexslice System
P750	Kinematic Runtime FEC
P843 - P844	UNIPLAY 7" & 10" HMI's
P912	2 x EtherCAT Axes

PRODUCT CODE:

P760 PC-MCAT 64 EtherCAT Controller

EtherCAT®

SPECIFICATION:

Motion Specification:

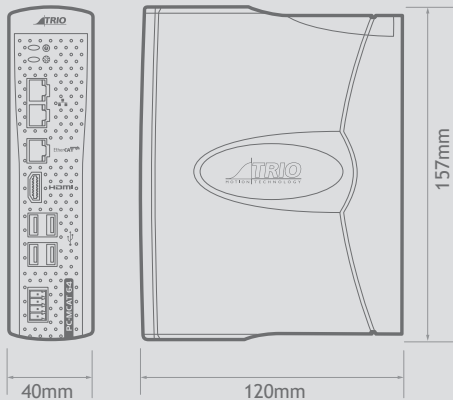
Motion Axes	2 / 4 / 8 / 16 / 32 / 64
Servo Cycle	250 / 500 / 1000 / 2000 μ sec
Drive Modes	Position / Speed / Torque
Interpolation	Linear / Circular / Helical / Spherical / Transition Curves / Tangential
Linked Modes	Cam, Cambox, Flexlink, Movelink, Camlink

EtherCAT Specification:

Speed	100Mbps
Physical Layer	100BASE-TX full duplex (IEEE 802.3)
Cable	Shielded Twisted Pair (TIA/EIA-568B CAT5e)
Topology	Line, tree or star
Isolation	Pulse transformer with common-mode choke
Connector	RJ45
Cable Length	100m max between nodes
Cyclic period	250 μ sec, 500 μ sec, 1000 μ sec or 2000 μ sec
Synchronisation	Distributed Clocks technology. Jitter <1 μ sec
Protocol	CoE, SoE
Number of Axes	64
Number of Nodes	128 slave nodes maximum
Motion modes	Cyclic Synchronous Position, Cyclic Synchronous Velocity, Cyclic Synchronous Torque
Parameter transfer	CoE Object read/write. SoE IDN read/write
Input/Output	Up to 8192

PC Specification:

Processor	Intel Atom™ E3845 Quad Core 1.91 Ghz
Memory	4 GBytes DDR3
Ethernet	2 x GBit Ethernet + EtherCAT port
HDMI	2560 x 1600 @ 60Hz Max
Audio	Via HDMI
USB	5 USB ports
Battery	8 Year life PLC compatible type. Replaceable without opening case.
Power Supply	24V +/- 20% Isolated Power Supply
Operating Temp	0 deg – 40 deg C
Cooling	Fanless
Operating System	Windows with RTX64 Real Time Extension



Soft Motion Coordinator

PC-MCAT S

SPECIFICATION:

Minimum System Requirements:

Realtek Ethernet Network card - 8169 architecture:
One port will be used as the EtherCAT connection
Intel HyperThreading technology disabled:
The BIOS must allow this feature to be disabled;
Any relatively modern intel processor allows this
Minimum 1 USB port
Windows 7 / Windows 7 Embedded 64 bits
RTX64 3.3 Update 2 Runtime or above
PC-MCAT firmware installation

Minimum Hardware Recommendation:

Intel Atom processor Quad Core 1910 MHz
4 GBytes RAM
4 GBytes RAM
2 Ethernet ports (EtherCAT and additional communications)

PRODUCT CODE:

P762 PC-MCAT S (2 Axes) Soft MC

ACCESSORIES:

P750 Robot Kinematic Software FEC
P912 Axis x 2 upgrade

Run the PC-MCAT Motion Coordinator on a Windows based Industrial PC of your own choice. PC-MCAT S provides all the features of the PC-MCAT in a software package that can be installed on a suitable PC.

This approach allows the user to decide on processor speed, graphics capability and memory size giving a scalable solution that suits your application.

PC-MCAT S may be installed for trials without needing a licence. It will run for one hour after each reset. Full function operation is controlled by a USB dongle supplied by Trio.

