
TRIO
MOTION TECHNOLOGY
A MEMBER OF THE ESTUN GROUP
TRIO MOTION TECHNOLOGY
MC403-X
P865 | P866 | P867
MC 403
TRIO
RESET IP
- THE MOTION SPECIALIST -

MC403-X

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Pulse and Direction Controller All-in-one Controller

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AT A GLANCE

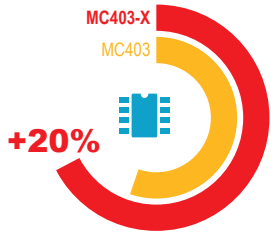
- Advanced 2 Axis Closed Loop Servo / 3 Axis Pulse Direction
- Linear, Circular, Helical and Spherical Interpolation
- Flexible CAM shapes, Linked Motion
- Biss, EnDAT, Tamagawa and SSI Absolute Encoder Supported
- Hardware Linked Outputs for Camera / Laser Control
- Ethernet-IP / Modbus TCP / Ethernet Interface Built-In
- 125 – 2000 µsec Selectable Servo Update
- Precise 64 bit Motion Calculations on Cortex M7 Processor with VFP
- IEC 61131-3 Programming
- Multi-tasking BASIC Programming
- Text File Handling
- Robotic Transformations
- Micro SD Memory Card Slot
- CANopen I/O Expansion
- RoHS, UL Listed, CE approved

The MC403-X is Trio's next generation panel mount *Motion Coordinator* using a high performance Cortex M7 processor. With three flexible axis ports and I/O for machine control, it is designed as a direct replacement for the successful MC403.

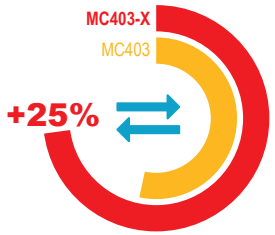
Each of the flexible axis ports can be configured in software as either input or output. As an output it can be used as 'pulse and direction' to control steppers or servo drives, or operate as a simulated encoder output. When configured as an input the axis port supports a variety of feedback devices including incremental encoder, SSI, EnDat or Tamagawa. The two voltage outputs on the MC403-X can be used in conjunction with the feedback device to form a closed loop servo.

The built-in Ethernet port allows programming and connection of common HMI and PLC protocols directly to the MC403-X. User programs can be written in Trio's established multi-tasking programming language using the powerful *Motion* Perfect application development software, making complex motion easy. Also available as an option are the industry standard IEC 61131-3 languages allowing a fully functional PLC programming system.

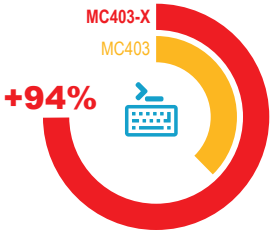
Processor Speed



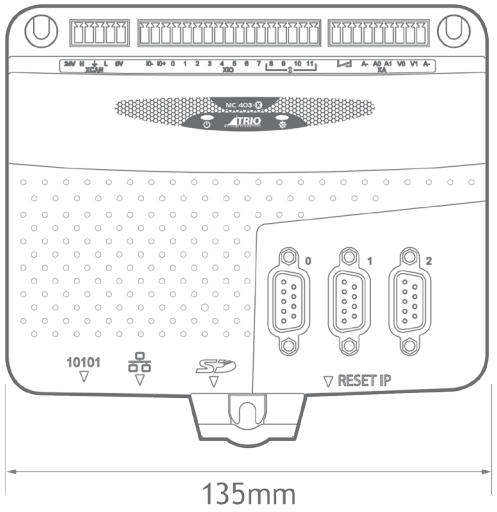
Ethernet TCP Comms Speed

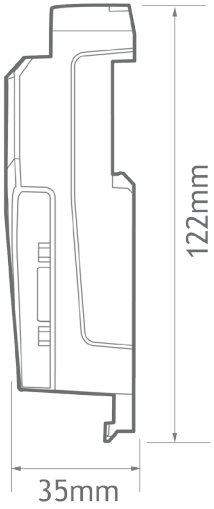


Program Execution Speed



Dimensions





Accessories

P317 - P329	CAN I/O Modules
P561 - P563	UNIPLAY HMI's
P750	Kinematic Runtime FEC
P818	MC403-X Upgrade FEC (P865 to P866)
P819	MC403-X Upgrade FEC (P866 to P867)

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PRODUCT	P865	P866	P867
CONFIGURATION			
Axis 0	Extended	Extended + AS	Extended + AS
Axis 1	Extended	Extended	Extended + AS
Axis 2	-	Extended	Extended
AXES			
Max axes	2	3	3
Max networked axes		0	
Max virtual axes		16	
Max discrete wired axes	2	3	3
PERFORMANCE			
Cores		1	
Processor		ARM Cortex-M7	
Clock frequency		396 MHz	
Maths precision		IEEE 457 Double	
Position register precision		64 bit	
Execution benchmark		67 lines/ms	
Real-time clock		Yes	
Flash memory		32 x 16000 values	
User memory		4 MB	
Table memory		512000 values	
Min expected flash memory life (normal use)		20 years	
Maximum VR variables		4096	
Maximum servo period		4000 μs	
Minimum servo period		125 μs	
Max encoder input frequency		6.000 MHz	
Max stepper output frequency		2.000 MHz	
DRIVE INTERFACES			
Servo	No	Yes	Yes
SLM	No	No	No
Step & direction	Yes	Yes	Yes
COMMUNICATIONS			
CANopen		Yes	
DeviceNet		Yes	
Ethernet		Yes	

PRODUCT	P865	P866	P867
EthernetIP		Yes	
Hostlink		Yes	
MODBUS-RTU		Yes	
MODBUS-TCP/IP		Yes	
RS232/RS485		Yes	
ENCODER PORTS			
Feedback input		Yes	
Incremental (A+B) output		Yes	
Pulse & direction output		Yes	
Reference input		Yes	
SSI Absolute Input		Yes	
EnDat Absolute Input		Yes	
Tamagawa Absolute Input		Yes	
BiSS Absolute Input		Yes	
INTERNAL I/O			
+/-10V analogue outputs		2	
Analogue output precision		12 bits	
Analogue Inputs (0-10V)		2	
Analog input precision		12 bits	
Digital Bidirectional I/O (24V)		4	
Digital Inputs (24Vdc)		8	
Digital outputs (24Vdc)		0	
Registration inputs		6	
Registration speed		1 μs	
Watchdogs		1	
Watchdog rating		29V, 100mA max	
EXTERNAL I/O			
+/-10V analogue outputs		16	
Analogue output precision		12 bits	
+/-10V analogue inputs		32	
Analogue input precision		12 bits	
Digital I/O points		512	
PROGRAMMING			
Trio BASIC		Yes	
DXF in		Yes	

PRODUCT	P865	P866	P867
G-Code		Yes	
HPGL		Yes	
IEC61131		Yes	
Kinematic		Option	
Maximum programs		64	
Maximum tasks		6	
EXPANSION			
Expansion module type		None	
Maximum modules		0	
Memory card		Micro SD	
PHYSICAL			
Maximum operating temp		45 °C	
Minimum operating temp		0 °C	
Mount		Panel	
Depth		35.0 mm	
Height		122.0 mm	
Width		135.0 mm	
Weight		325 g	
POWER			
Supply current		350 mA	
Supply tolerance		+/- 20%	
Supply voltage		24 V	
CERTIFICATION			
CE		Yes	
RoHS		Yes	
UL		Yes	

Axis Configuration

CORE AXES – can be configured in software as pulse and direction outputs to stepper or servo drives. They can also be configured for incremental encoder feedback or simulated encoder output.

EXTENDED AXES – in addition to the Core functionality these axes can also be configured for SSI, Tamagawa or EnDat absolute encoders.

AS -Analogue 'closed loop' Servo using built-in ±10V analogue output.

Preliminary specifications may change without notice

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Trio Motion Technology specialises in advanced motion control as a core, providing a range of *Motion Coordinators,* drives and motors, expansion interfaces, I/O modules and HMI's built on Motion-iX technologies and designed to enable the control of industrial machines with the minimum of external components.

In support of the Trio concept, we aim to offer the best technical support by telephone, email, our comprehensive website and training courses held throughout the year. Please look at our web site for details.

www.triomotion.com

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MC403-X v1.1 2023