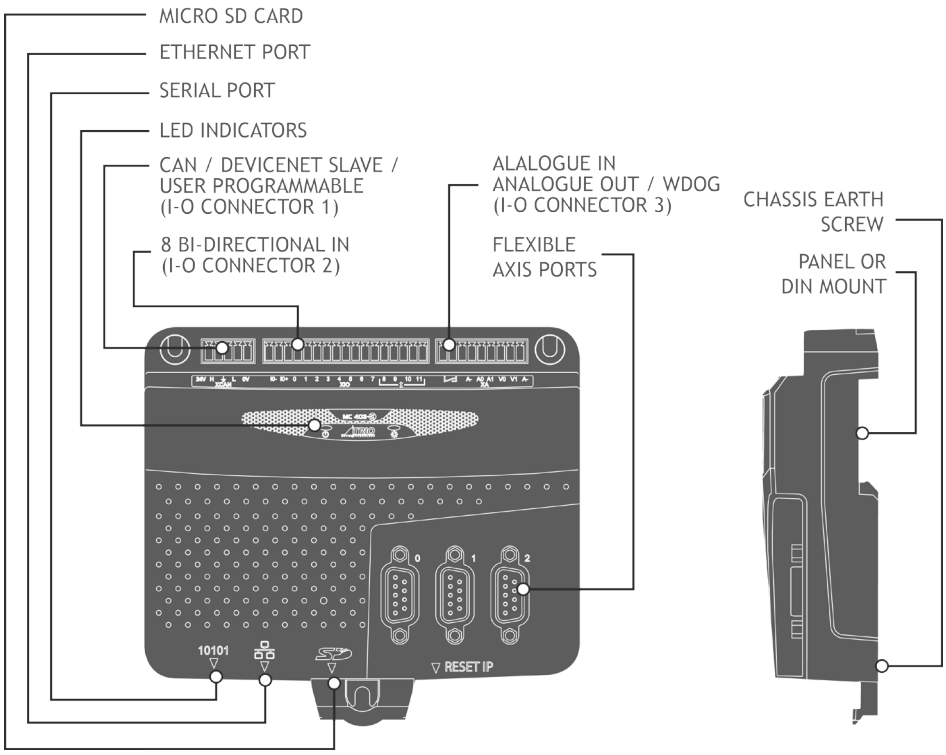
TRIO MOTION TECHNOLOGY

A MEMBER OF THE ESTUN GROUP



QUICK START GUIDE

MC403-X

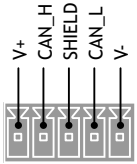
P865 | P866 | P867

SAFETY WARNING

During the installation or use of control systems, users of Trio products must ensure that there is no possibility of injury to any person or damage to machinery.

Control systems, especially during installation, can malfunction or behave unexpectedly. Bearing this in mind, users must ensure that even in the event of a malfunction or unexpected behaviour, the safety of an operator or programmer is never compromised.

5-WAY CONNECTOR



This is a 5 way 3.5mm pitch connector. The connector is used both to provide the 24 Volt power to the MC403-X and provide connections for I/O expansion via Trio's CAN I/O expanders. A 24V dc, Class 2 transformer or power source must be provided as this powers the unit.

This 24 Volt input is internally isolated from the I/O 24 Volts and the +/-10V voltage outputs.

THE 24V (V+) AND 0V (V-) MUST BE CONNECTED AS THEY POWER THE MC403-X. THE MC403-X IS GROUNDED VIA THE METAL CHASSIS. FIT A SHORT SHIELD CONNECTION BETWEEN THE CHASSIS EARTH SCREW AND THE EARTHED METAL MOUNTING PANEL / PLATE. THE CAN CONNECTIONS ARE OPTIONAL.

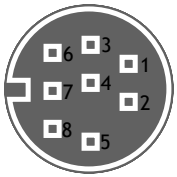
See the Technical Reference Manual for important power connection EMC information.

ETHERNET CONNECTOR (RJ45)

A standard Ethernet connector is provided for use as the primary programming interface.

The Trio programming software, *Motion* Perfect, must be installed on a Windows based PC that is fitted with an Ethernet connection. **Ethernet cable must be CAT 5 or better.**

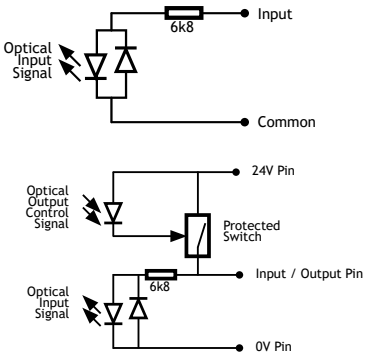
SERIAL CONNECTIONS

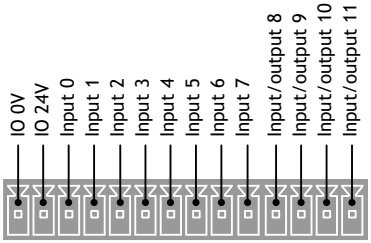


Pin	Function	Note
1	RS485 Data In A Rx+	Serial Port #2
2	RS485 Data In B Rx-	
3	RS232 Transmit	Serial Port #1
4	0V Serial	
5	RS232 Receive	Serial Port #1
6	5V Output	150mA max
7	RS485 Data Out Z Tx-	Serial Port #2
8	RS485 Data Out Y Tx+	

I/O CONNECTOR 1

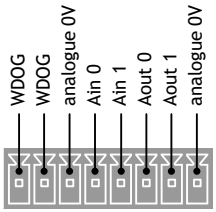
Any input, 0 - 5, may be mapped to any axis as a registration input.





I/O CONNECTOR 2

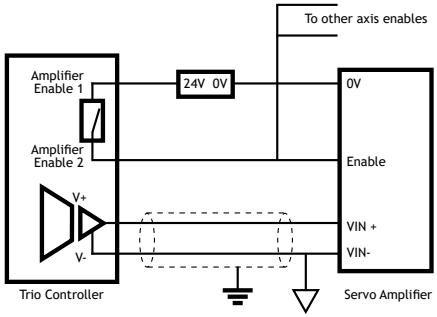
I/O 24V must be applied to power the analogue inputs and outputs.



AMPLIFIER ENABLE (WATCHDOG) RELAY OUTPUT (I/O CONNECTOR 2)

An internal relay is used to enable external amplifiers when the controller has powered up correctly and the system and application software are ready. The amplifier enable is a single pole solid state relay with a normally open “contact”. The enable relay contact will be open circuit if there is no power on the controller OR a following error exists on a servo axis OR the user program sets it open with the WDOG=OFF command.

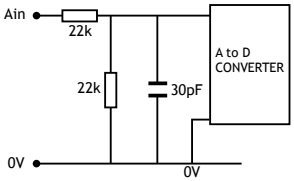
ALL STEPPER AND SERVO AMPLIFIERS MUST BE INHIBITED WHEN THE AMPLIFIER ENABLE OUTPUT IS OPEN CIRCUIT.



ANALOGUE INPUTS

Ain0: 0 to 10V

AIN1: 0 TO 10V



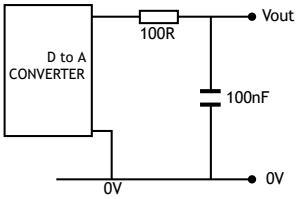
ANALOGUE OUTPUTS

Aout 0 to Aout 1

Output: +/-10V at 5mA

Output impedance: 100 Ohms.

Common 0V return. Isolated from I/O & Encoders.

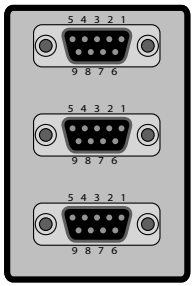


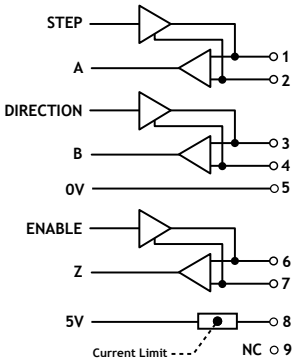
STEPPER OUTPUTS / ENCODER INPUTS

Pin	Servo Axis	Stepper Axis	Absolute Encoder
1	Enc. A	Step +	Clock
2	Enc. /A	Step -	/Clock
3	Enc. B	Direction +	--------
4	Enc. /B	Direction -	--------
5	0V	0V	0V Enc.
6	Enc. Z	Enable +	Data
7	Enc. /Z	Enable -	/Data
8	5V*	5V*	5V*
9	Not Connected	Not Connected	Not Connected

* Current limit is 150mA total, shared between all axes.

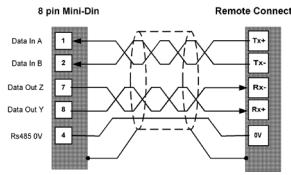
Absolute encoder functions are not available on all models.



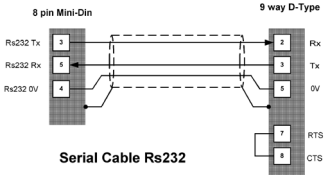


GROUNDING AND SHIELDING

Good quality screened cables should be used for the serial ports. The serial ports and CANbus port are not galvanically isolated, therefore the 0V return MUST be connected to all peripheral devices. In addition, bond together the 0V (24V return) terminals of all system components so as to minimise current flowing in the serial cables.



Serial Cable Rs485

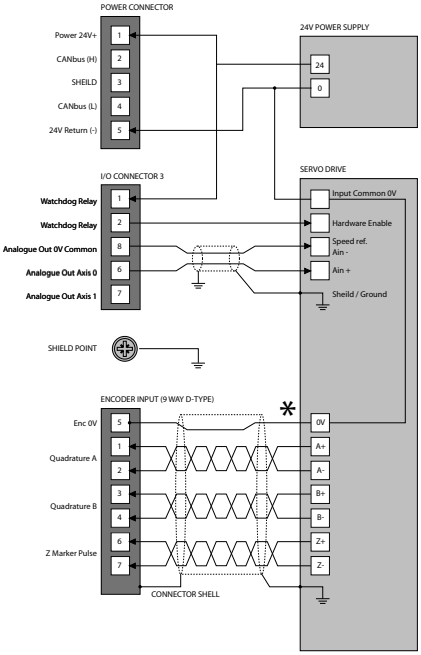


Serial Cable Rs232

Ensure that:

1. The shield screw is grounded as close to the MC403-X as possible.
2. 0V, V- and E- connections are NOT used for terminating screens.
3. Pin 5 of Encoder/Stepper plug is connected to 0V on drive.
4. Encoder cable screen is clamped to 9 way D shell.
5. The MC403-X 24V supply has common 0V with the drive(s).

WHEN WIRING MC403-X STEPPER OUTPUTS TO A DIFFERENTIAL INPUT STEPPER DRIVE, USE THE 0V AND SHIELD CONNECTIONS SHOWN FOR THE ENCODER. THE STEPPER DRIVE MUST HAVE ITS COMMON 0V CONNECTED TO THE MC403-X 24V RETURN. (24V -)



* Encoder output 0V MUST be connected to pin 5

STATUS LED'S

Display at start-up

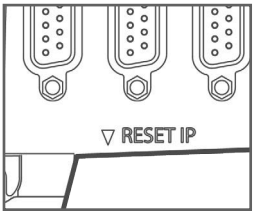
green - ON red - ON

Display with WDOG on

green - ON red - OFF

Display Error

green - ON red - FLASHING



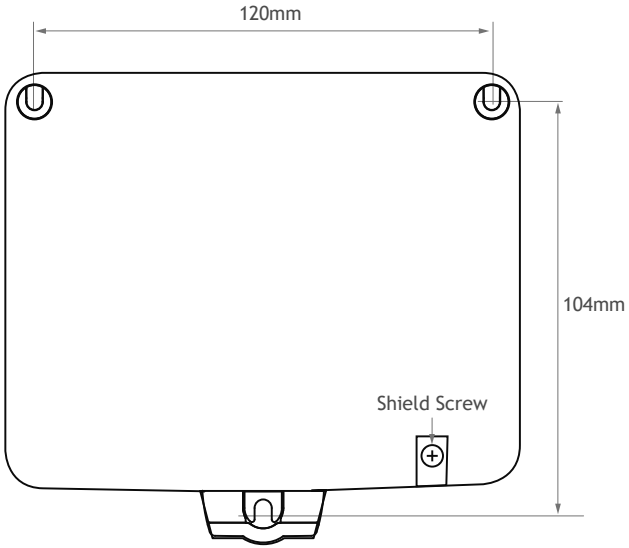
IP ADDRESS RESET

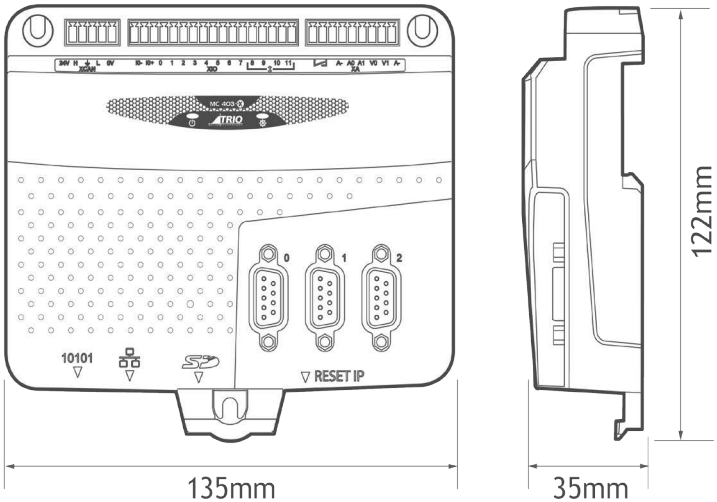
The factory default IP address is 192.168.0.250. This can be changed using the ETHERNET or IP_ADDRESS commands via *Motion* Perfect. To return to the factory IP address, hold the IP address reset switch in while powering up.

CHASSIS MOUNTING DIMENSIONS (LOOKING FROM FRONT)

M4 screws should be used in 3 places to mount the MC403-X to an unpainted metal panel.

The best EMC performance is obtained when the MC403-X is attached from the shield screw (marked) using a flat braided conductor with a cross section of 4mm x 1mm. Do NOT use a circular section wire or run the braid to a central star point.





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CAD data Drawings to aid packaging and mounting are available in various formats from the Trio web site. Products should be wired by qualified persons.
Specifications may change without notice. E & OE

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