

## QUICK START GUIDE MC508

P848 | P849

## 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

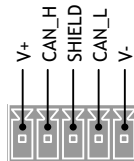
This is a 5 way 3.5mm pitch connector. The connector is used both to provide the 24 Volt power to the MC508 and provide connections for I/O expansion via Trio's CAN I/O expanders. A 24V dc, Class 2 transformer or power source must be provided as this powers the unit.

This 24 Volt input is fully isolated.



**THE 24V (V+) AND 0V (V-) MUST BE CONNECTED AS THEY POWER THE MC508. THE MC508 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. The IP address is displayed on the MC508 display for a few seconds after power-up or when an Ethernet cable is plugged in.

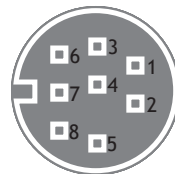


**Ethernet cable must be CAT 5 or better.**



### 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+	



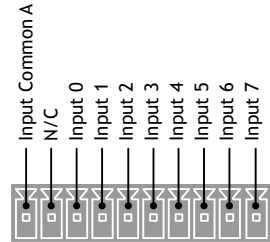
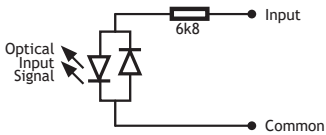
\*400mA total shared with encoders

### I/O CONNECTOR 1

PNP (current sink) operation: Connect common to 0V.

NPN (current source) operation: Connect common to 24V.

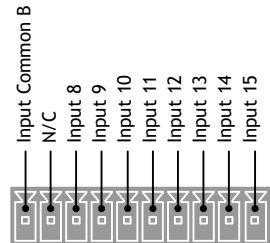
Any input, 0 - 7, may be mapped to any axis as a registration input.



### I/O CONNECTOR 2

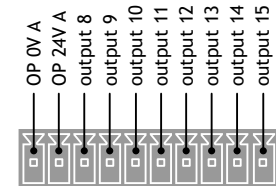
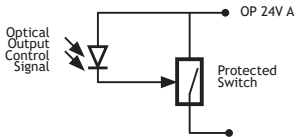
PNP operation: Connect common to 0V.

NPN operation: Connect common to 24V.



### I/O CONNECTOR 3

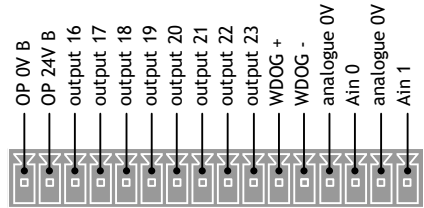
24V Power / Outputs 8 - 15



## I/O CONNECTOR 4 (WDOG / OUTPUTS / ANALOGUE INPUTS)



24V must be applied to power the outputs, analogue inputs and DAC outputs on the axis connector.

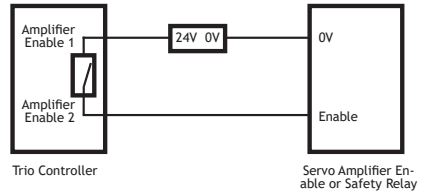


### AMPLIFIER ENABLE (WATCHDOG) RELAY OUTPUT

An internal solid-state relay is used to enable external amplifiers when the controller has powered up correctly and the system and application software are ready. The enable relay contact will be open circuit if there is no power on the controller OR the user program sets it open with the WDOG=OFF command. Each axis also has an independent enable relay which operates in tandem with the main relay as determined by the application program. See MC4 range technical manuals for details.



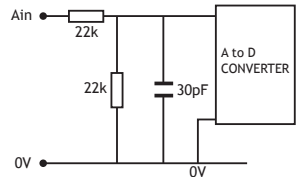
**ALL STEPPER AND SERVO AMPLIFIERS MUST BE INHIBITED WHEN THE AMPLIFIER ENABLE OUTPUT IS OPEN CIRCUIT.**



### ANALOGUE INPUTS

Ain0: 0 to 10V

Ain1: 0 TO 10V



### ANALOGUE OUTPUTS

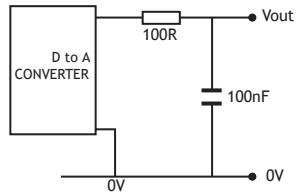
Vout0 to Vout7

Output: +/-10V at 5mA

Output impedance: 100 Ohms.

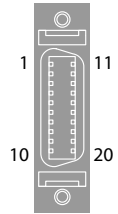
Common 0V return.

Via Flexible Axis connectors.



## FLEXIBLE AXIS CONNECTOR

Pin	Incremental Encoder Function	Pulse & Direction Function	Pulse & Direction Function (P849 ONLY)	Absolute Encoder Function
1	Enc A(n)	Pulse(n)	Pulse(n)	Clock(n)
2	Enc /A(n)	/Pulse(n)	/Pulse(n)	/Clock(n)
3	Enc B(n)	Dir(n)	Dir(n)	NC
4	Enc /B(n)	/Dir(n)	/Dir(n)	NC
5	+5V Enc (100mA max.)			
6	Do not connect			
7	WDOG(n)+			
8	WDOG(n)-			
9	Input A+ (16 + n*2)			
10	Input A/B Common			
11	Enc Z(n)	Enable(n)	Pulse(n+8)	Data(n)
12	Enc /Z(n)	/Enable(n)	/Pulse(n+8)	/Data(n)
13	NC	NC	Dir(n+8)	NC
14	NC	NC	/Dir(n+8)	NC
15	0V Enc			
16	Do not connect			
17	VOUT + (n) (24V must be applied on I/O connector 4 for operation)			
18	VOUT - (n) (24V must be applied on I/O connector 4 for operation)			
19	Do not connect			
20	Input B + (17 + n*2)			
Shell	Screen			



1. n=axis number
2. WDOG(n)+/- = normally open solid state relay, rated 24V@100mA (one per axis)
3. Input A/B Common, 0V\_Enc & VOUT- are all isolated so must be connected with the correct signals.
4. +5V Output 400mA maximum current output is shared between all 8 axis connectors and the serial connector. 100mA maximum per axis connector.

## LCD DISPLAY


The IP address and subnet mask of the MC508 is shown on the LCD display for a few seconds after power-up. The factory default IP address is 192.168.0.250. This can be changed using the ETHERNET or the `IP _ ADDRESS` command via *Motion Perfect*.

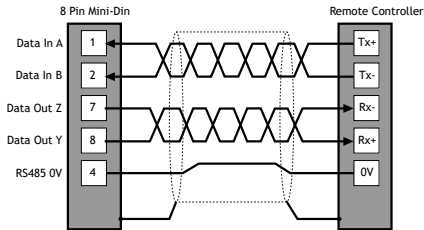


Display at start-up

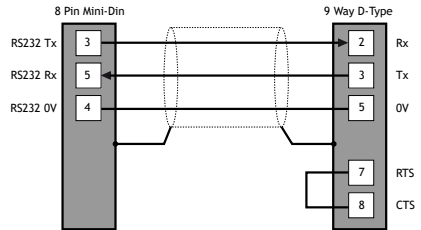


Display with WDOG on

 **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

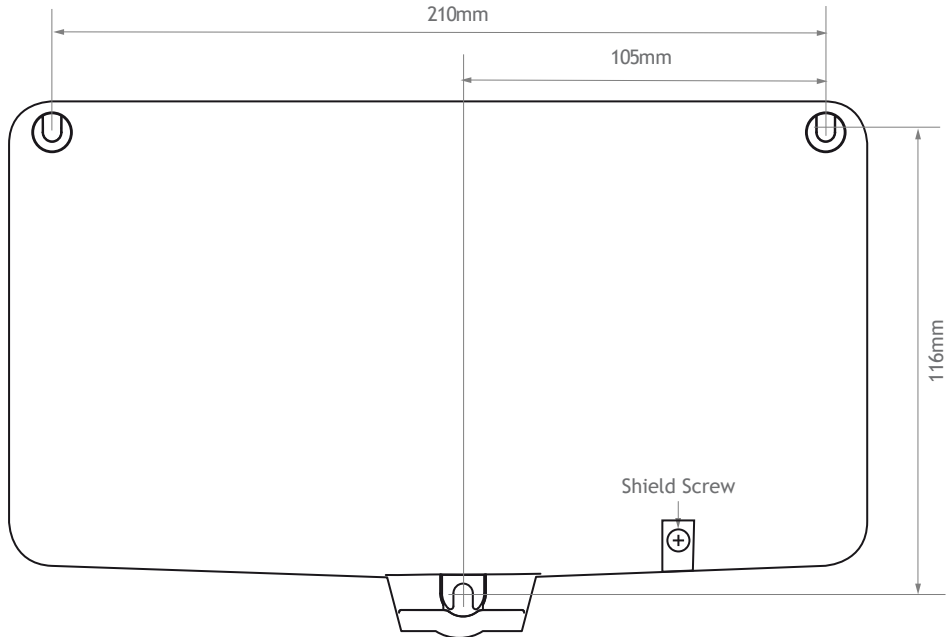


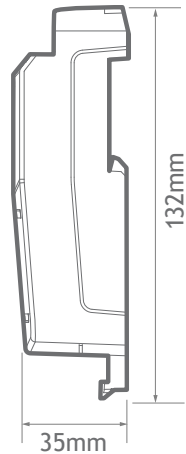
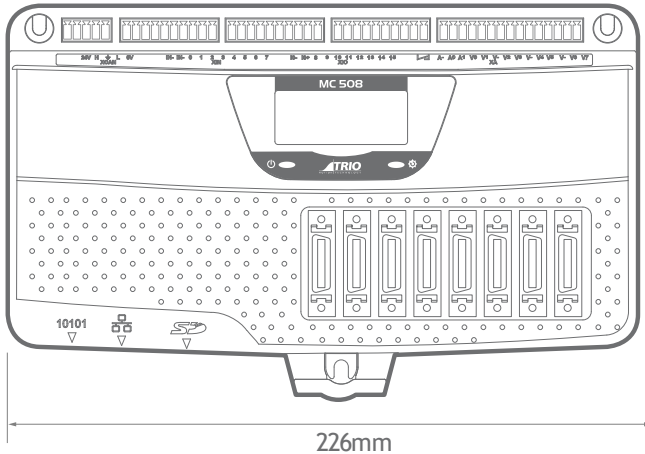
Serial Cable RS232

## CHASSIS MOUNTING DIMENSIONS (LOOKING FROM FRONT)

M4 screws should be used in 3 places to mount the MC508 to an unpainted metal panel.

The best EMC performance is obtained when the MC508 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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