

(Please refer to the *Motion Coordinator* Technical Reference Manual for Full Details)

POWER CONNECTOR



The bottom 2 pins of input connector 1 are used to provide the 24V dc power to the MC224. A 24V dc, Class 2 transformer or power source must be provided.

This 24 Volt input also supplies power to the I/O 24 Volts and any daughter boards fitted.

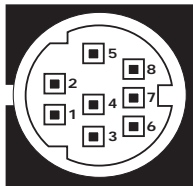
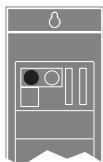
The MC224 is grounded via the metal case. It MUST be installed on an unpainted metal plate which is connected to earth.

MEMORY CARD SLOT



A memory slot is provided for the *NexFlash* memory stick or P396 SD Card adaptor. Available seperately.

SERIAL CONNECTIONS

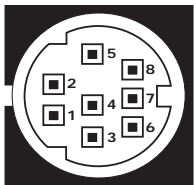
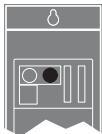


Serial Connector A

Pin	Function	Note
1	Internal 5V	
2	Internal 0V	
3	RS232 Transmit	Serial Port #0
4	RS232 0V	
5	RS232 Receive	
6	+5V output	
7	Externally buffered output (TTL)	For fibre-optic adaptor.
8	Externally buffered input (TTL)	

Note: Port 0 is the default programming port for connection to the PC running Motion Perfect.

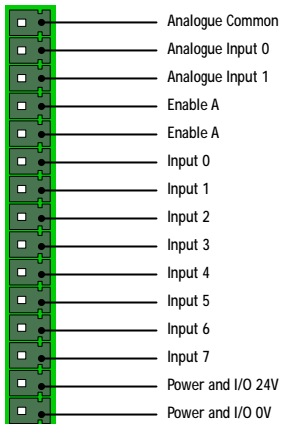
SERIAL CONNECTIONS



Serial Connector B

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	RS232 0V	
5	RS232 RS485 0V	Serial Port #2
6	Internal 5v	
7	RS485 Data Out Z Tx-	Serial Port #2
8	RS485 Data Out Y Tx+	

I/O CONNECTOR 1



ANALOGUE INPUT:

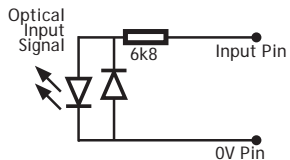
Ain0: 0 to 10V

PAin1: 0 TO 10V

ENABLE A AND ENABLE B:

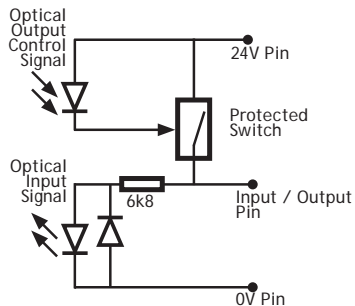
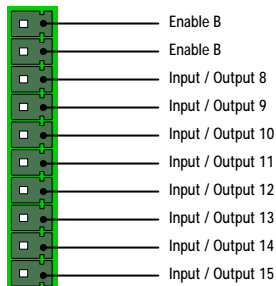
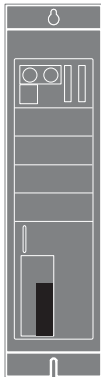
Solid state relay

100mA max



NOTE: Analogue input circuit is powered from CANbus port 24V.

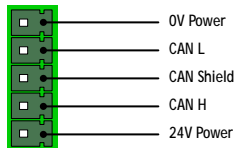
I/O CONNECTOR 2



Two internal relays are used to enable external amplifiers when the controller has powered up correctly and the system and application software are ready. Each 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.

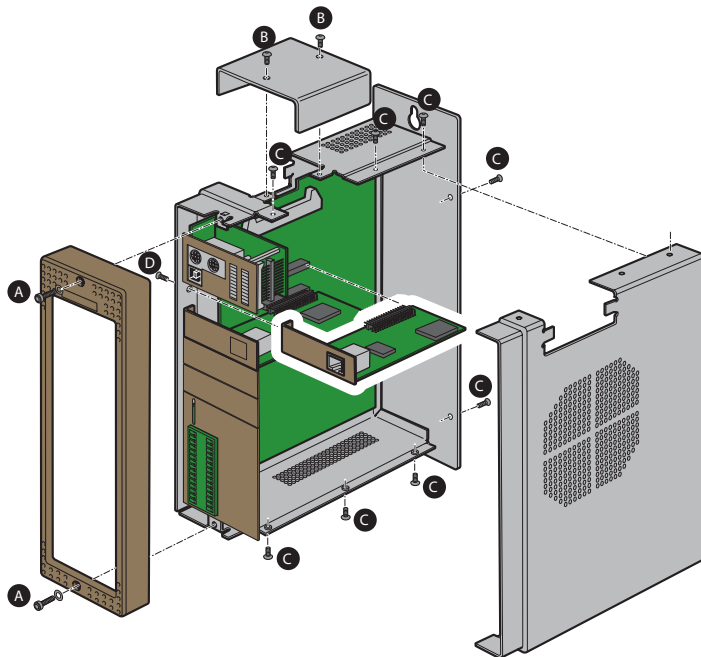
ALL STEPPER AND SERVO AMPLIFIERS MUST BE INHIBITED WHEN THE AMPLIFIER ENABLE OUTPUT IS OPEN CIRCUIT

CANBUS CONNECTOR



NOTE: 24V power must be supplied from an external source.

ADDING DAUGHTER BOARDS



Unscrew the 2 Allen screws (A) which secure the front moulding cover and remove the cover.

Unscrew the top ribbon cable bus cover (B). If the ribbon cable is connected, remove this by pushing the retaining levers outwards.

Unscrew the 8 screws (C) which secure the right hand side cover of the module.

Unscrew the single screw (D) which secures the axis daughter board to the left hand side of the module. This is located by the left hand end of the axis daughter front panel.

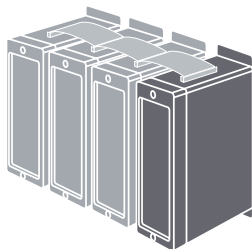
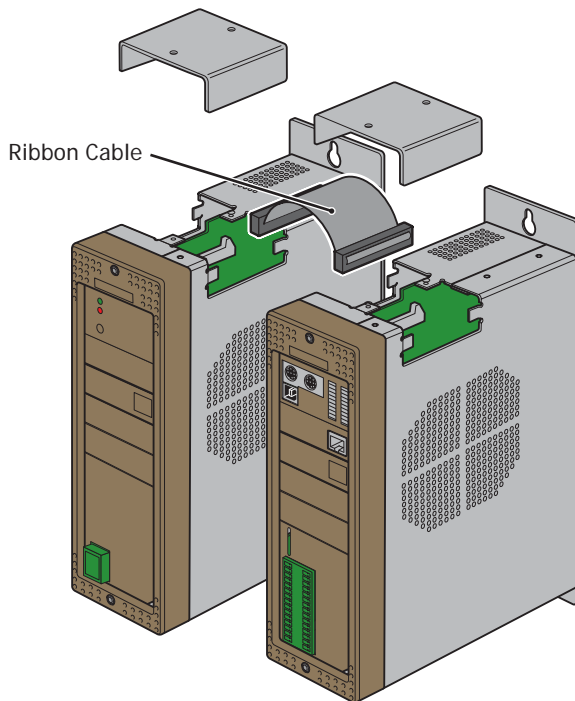
The sequence is reversed after inserting any new modules.

**TABLE OF
DAUGHTER
BOARDS**

Product code:	Description	MC224	P301
P200	Servo Encoder	Y	Y
P201	Enhanced Servo Encoder	Y	Y
P210	Servo Resolver	Y	Y
P220	Reference Encoder	Y	Y
P225	Analogue Input (8 x 16 bit)	Y	N
P230	Stepper	Y	Y
P240	Stepper Encoder	Y	Y
P242	Hardware Pswitch	Y	Y
P260	Analogue Output	Y	Y
P270	SSI Absolute Servo	Y	Y
P280	Differential Stepper	Y	Y
P290	CAN	Y	N
P291	SERCOS	Y	N
P292	3 Axis SLM	Y	N
P293	Enhanced CAN	Y	N
P295	USB Interface	N	N
P296	Ethernet	Y	N
P297	Profibus	Y	N
P298	Ethernet IP	Y	N

NOTE: Only one of each of the following daughter boards may be used in the MC224 at the same time; P296, P297 and P298.

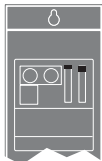
ADDING AXIS EXPANDER



Product code:	Description
P355	2 way ribbon cable
P360	3 way ribbon cable
P365	4 way ribbon cable

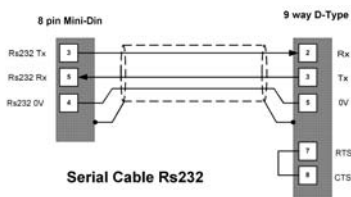
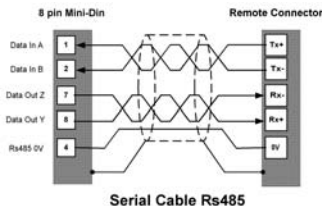
NOTE:Up to 3 Axis Expanders may be added to the MC224

LED ERROR CODES



OK	STATUS	No power or critical fault
OK	STATUS	Normal operation
OK	STATUS	Enable relay open
OK	STATUS	Enable relay energised
OK	STATUS	Error in motion system (flashing)
	BAT	Low Battery (change internal mem battery)

Good quality screened cables should be used for the serial ports and for the USB link. The serial ports, USB port 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.



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