

# MSB420 Data Sheet

The MSB420 is the motherboard for the PM304 Intelligent Servo Motor Controller. It is designed to facilitate connections to the unit.

This board is 3U high and 7E wide, and so is no larger than a PM304. It is to be fitted in the backplane area of a 3U rack. It has a 64 way DIN41612 connector for connection to a PM304 allowing the controller to be a plug in unit. On the rear side there are plug-in screw terminals for all connections, except RS232 serial communications which are 3 pin Molex connectors.

<b>Power Supply connections.</b>		Supply for PM304 controller.
1 & 2	+VLL Logic Supply	Supply for PM304 controller. 10 - 40V DC.
23 & 24	0VLL Logic Supply	0V

<b>Positional Encoder connections.</b>		For positional feedback of driven axis.
Use either <i>complementary</i> input connector <b>OR</b> <i>TTL</i> input connector as appropriate for the type of encoder used. The type of input must also be set by the switch (SW3) on the PM304.		
3	+5V	Supply for encoder.
4	0V	
5	A+	A channel non inverted complementary input.
6	B+	B channel non inverted complementary input.
7	A-	A channel inverted complementary input.
8	B-	B channel inverted complementary input.
9	+5V	Supply for encoder.
10	0V	
11	A+	A channel TTL input.
12	B+	B channel TTL input.

<b>Input Encoder connections.</b>		For auxiliary encoder input
(e.g. double encoder feedback, gearbox mode or cam mode).		
Use either <i>complementary</i> input connector <b>OR</b> <i>TTL</i> input connector as appropriate for the type of encoder used. The type of input must also be set by the switch (SW2) on the PM304.		
13	+5V	Supply for encoder.
14	0V	
15	A+	A channel non inverted complementary input.
16	B+	B channel non inverted complementary input.
17	A-	A channel inverted complementary input.
18	B-	B channel inverted complementary input.
19	+5V	Supply for encoder.
20	0V	
21	A+	A channel TTL input.
22	B+	B channel TTL input.

<b>Write Port connections.</b>		Opto-isolated outputs
25	WP1	Write Port 1 output
26	WP2	Write Port 2 output
27	WP3	Write Port 3 output
28	WP4	Write Port 4 output
29	WPVS	Voltage source for Write Ports

**Read Port connections.** Opto-isolated inputs

30	RP0V	Isolated 0V for Read Ports
31	RP1	Read Port 1 input
32	RP2	Read Port 2 input
33	RP3	Read Port 3 input
34	RP4	Read Port 4 input

**Emergency Stop connections.** Opto-isolated input

35		Emergency Stop input
36		Isolated 0v for Emergency Stop

**Hard Limit connections.** Opto-isolated inputs

37	+HL	Hard Limit input for positive motion
38	-HL	Hard Limit input for negative motion
39	HL0V	Isolated 0V for Hard Limits
40	0V	0V (supply)

**Jog (manual) Control connections.** Opto-isolated inputs

41	JOG+	Jog positive input
42	JOG-	Jog negative input
43	JOGF	Jog fast input
44	JOG0V	Isolated 0V for Jog inputs

**Tracking Output connection.** Opto-Isolator output

45		Voltage source for Tracking output
46		Tracking output

**Analogue Control connections.**

47		Analogue output
48		Analogue 0V

**RS232 connections.** Serial Communications

Port 1 - pin 1	Tx1	Transmit data to host computer / terminal
Port 1 - pin 2	Rx1	Receive data from host computer / terminal
Port 1 - pin 3	0V	0V
Port 2 - pin 1	Tx2	Transmit data to next axis controller in daisy chain
Port 2 - pin 2	Rx2	Receive data from next axis controller in daisy chain
Port 2 - pin 3	0V	0V

