DIY Motion Platform Illustrative System Wiring

24/36V DC PM Motors up to 20Amp nom ea. Power supply to match – it must be able to sink current. Note MD03's rated to 20 Amp ea. See MD03 documentation for motor noise suppression requirements.

Feedback potentiometers shown, +ve rotation must match +ve rotation of motors. Wire alternative MA3 encoders to 40SPU-1 connector CN3-1.

Wiper

10K linear pots fixed to actuators to feedback position.

IMPORTANT – the power supply to The 40 SPU-1 MUST be a 5V REGULATED supply of at least 500 mA capacity. An unregulated or inadequate power supply can cause malfunction of the hardware and may result in loss of motion control.

Normally closed "Output Pause" switch

+24/36V

0V

24/36V DC Power Supply Eg Batteries

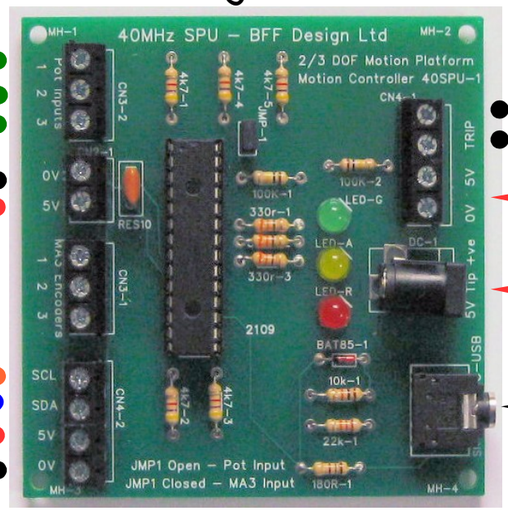
25A Fuse

Pot1

Pot2

Pot3

40SPU-1 Signal Processor



5V DC Regulated (500mA min)

From PC PICAXE AXE027 (USB) Or AXE026 (Serial) Input Cable

+V
M-
M+
0V
GND
SDA
SCL
+5V

MD03 1
I2C Address 0xB0

MD03 2
I2C Address 0xB2

MD03 3
I2C Address 0xB4

Act 1 / Pitch Motor

Act 2 / Roll Motor

Act 3 / Heave Motor

Devantech MD03 DC Motor Controllers

IMPORTANT
Actuator normally closed limit switches MUST be wired in the 5V to MD03 line as Emergency Stop trip switches (note up to 6 needed -only 2 shown). An additional NC switch should be added as a manual Emergency Stop button.

Max wire length between 40SPU-1 and MD03's – 300mm.
Avoid loops in the logic GND wiring.
Keep 40SPU-1 AWAY from high current end of MD03's.
Do not connect 0V on 40SPU-1 directly to the 24/36V battery -ve.

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