Configuration information for the PMDX-110

The PMDX-110 is an OEM product for Smithy and there is no manual in the regular format.

This board is very similar to a PMDX-132 and a PMDX-106 combined. The Dip switch settings and push button function are the same as on the PMDX-106. Please refer to our web site www.pmdx.com to download these manuals.

JP1 selects GND or +5 volts as the common signal for use with the Gecko or other stepper motor drivers.

The limit switches are all combined onto a single input despite the fact that there are four connectors.

The connector pinouts and signal definitions are as follows:

Pinouts are as follows:

J1 - Pot and FWD/REV switch, 6 pin pluggable to operator panel switches and pot
pin 1 - "FWD" switch input, normally open for "OFF" (optionally RUN/STOP)
pin 2 - "ground" for control switches
pin 3 - "REV" switch input, normally open for "OFF" (optionally DIR)
pin 4 - 10 VDC bias supply for manual speed pot
pin 5 - analog speed voltage from manual speed pot "wiper"
pin 6 - analog "ground" to manual speed pot

J2 - Spindle Motor Driver, 6 pin pluggable to VFD or VSD
pin 1 - "FWD/RUN" normally open relay contact
pin 2 - "common" relay contact
pin 3 - "REV/DIR" normally open relay contact
pin 4 - normally not connected for Smithy, can be configured to accept pot bias from VSD
pin 5 - analog speed control signal to VSD, 0 - 10 VDC
pin 6 - analog "ground"

J3 - RJ11 connector for Microchip PIC programmer, factory use only

J4 - 26 pin ribbon cable header for parallel printer port input from computer accepts ribbon to DB-25 female, to be used with one to one, DB25 male-male cable, pin numbers below refer to DB-25 pins

       pin 1 > coolant enable from PC
       pin 2 > X dir
       pin 3 > X step
       pin 4 > Y dir
       pin 5 > Y step
       pin 6 > Z dir
       pin 7 > Z step
       pin 8 > A dir
       pin 9 > A step
       pin 10 > eStop status to PC
       pin 11 > inhibit switch status to PC
       pin 12 > limit switches status to PC
       pin 13 > probe status signal to PC
       pin 14 > spindle motor direction signal from PC (Mach config as Output 1 from M3 forward)
       pin 15 > spare status signal to PC

pin 16 > spindle speed as PWM signal from PC (This pin sets speed AND turns spindle on and off. When no PWM is present the spindle will stop. Mach does this by default when spindle PWM Control of spindle is selected. We recommend base frequency of 25 and minimum speed of 5%.
pin 17 > "charge pump" safety signal from PC, must be configured and active to enable motors
pins 18-25 > ground

J5, J7, J9, J11 - Stepper motor driver outputs, 4 pin pluggable
    pin 1 - "common" as set by JP1 to be either +5V or GND
    pin 2 - step, buffered version of parallel port data pin, no polarity mischief
    pin 3 - direction, buffered version of parallel port data pin, no polarity mischief
    pin 4 - "fault" signal from driver, active low, can only be used if "common" is GND (note, Gecko drivers do not have a fault output signal)

J6, J8, J10, J12 - 3 pin pluggable for limit sensors, all connectors electrically common
    pin 1 - GND
    pin 2 - limit input, active low, must be driven by switch or open collector to GND
    pin 2 - 24VDC sensor power

J13 - Option I/O connector, 5 pin pluggable
    pin 1 - control ground for options
    pin 2 - "spare" input, pulled up to +5 volts, 24 volt tolerant
    pin 3 - "probe" input, pulled up to +5 volts, 24 volt tolerant
    pin 4 - 5 VDC regulated for options
    pin 5 - 24 VDC unregulated for options

J14 - Main I/O connector, 8 pin pluggable
    pin 1 - control ground for accessories
    pin 2 - +24 VDC unregulated supply for accessories, 0.4 amperes maximum
    pin 3 - control ground for E-Stop and Inhibit switches
    pin 4 - E-Stop input, must be grounded to allow operation, pulled up to 24 VDC
    pin 5 - Inhibit input, ground to inhibit motion during tool change, pulled up to 24 VDC
    pin 6 - "Enable" output, active low open collector driver for 24 volt relay, killed by eStop or lack of "charge pump"
    pin 7 - "Coolant" output, active low open collector driver for 24 volt relay
    pin 8 - +24 VDC unregulated supply for "Enable" and "Coolant" relays

J15 - AC mains input, 4 pin non-pluggable, screw terminal strip for 220 - 240 VAC operation
    pin 1 - line phase A
    pin 2 - jumper to pin 3
    pin 3 - jumper to pin 2
    pin 4 - line phase B
for 110 - 120 VAC operation
    pin 1 - line phase A
    pin 2 - line phase A
    pin 3 - line phase B
    pin 4 - line phase B

The "Test" button behaves the same as the PMDX-106. Pot R35 is used to set the maximum speed voltage. Since the Smithy units do not use DC motors with their minimum start-up voltage, there is no minimum speed pot now.