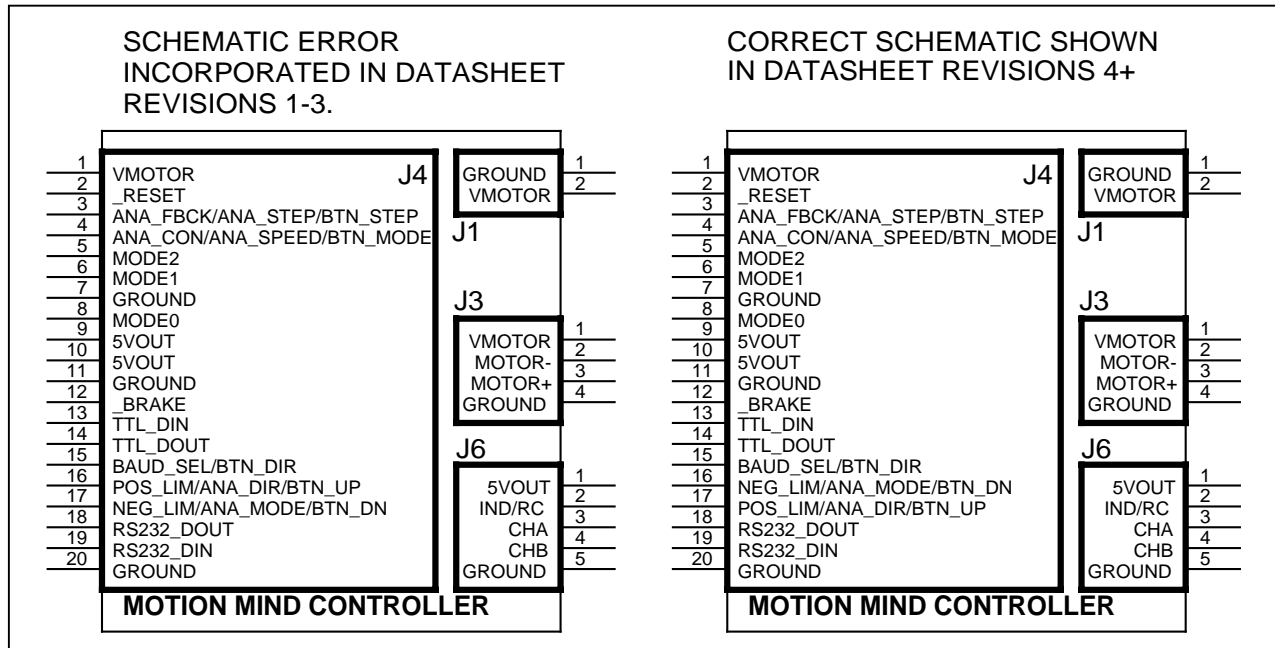


8.0 Errata Sheet

The ERRATA sheet tracks known bugs that we have been made aware of and whether or not they have been fixed as firmware changes are made. Other information may also be included if it appears to meet the needs of our customers. From time to time we may also incorporate functional changes in the Motion Mind. When these occur they are noted as a “Notice of change or addition”.

Datasheet Error: Datasheet revisions 1-3. The pin functions for J4 P16 and J4 P17 were swapped on earlier datasheet revisions. J4 P17 is the positive limit switch, analog direction, and button up input, J4 P16 is the negative limit switch, analog mode, and button down input.



Firmware Revision 1:

A) Error: When using the ASCII communication protocol writing values greater than 32,768 or less than 0 to the VELOCITYLIMIT register may cause the motor to run. Values written to this register should be limited to between +1 and +1023. Fixed in firmware revision 2.

Firmware Revision 2:

A) Error: When operating in mode 4 (serial PID position control mode) with the FUNCTION.POSPWUP, FUNCTION.SAVEPOS, and FUNCTION.VELLIMIT bits set, the controller will power up thinking it is at position 0, and will run to the saved position. Clearing the FUNCTION.VELLIMIT bit prevents this from happening. Fixed in firmware revision 3.

B) Notice of change or addition: Operating in ANALOG position control mode with a serial position command (serial control / analog feedback) was not available in firmware revision 1. Setting the FUNCTION.ADSERIAL bit and operating in mode 5 allows this control method to be used.

C) Notice of change or addition: By setting the FUNCTION.ENABLEDB bit you may use the value in the RCBAND register so set a dead band around the desired position (modes 4 and 5). When the actual position value falls within the desired position +/- RCBAND the motor drive signal is forced off. This can prevent a motor from heating up when it is essentially in position but still being driven due to the PID settings.

Firmware Revision 3:

- A) Error: When operating in ASCII serial mode, and with multiple units on the serial bus, serial responses are stepped on when the un-addressed unit(s) replies with a “BAD COMMAND<CR><LF>” response. There is no work around barring running separate DOUT connections from the Motion Mind units to individual pins on the controlling device. You can operate in binary mode and avoid this issue. Fixed in firmware revision 4.

Firmware Revision 4:

- A) Notice of change or addition: Limit switch functionality in ANALOG position control mode was not provided in previous firmware revisions. Since the schematic related to ANALOG position control mode showed limit switches we have incorporated the limit switch functionality in firmware revision 4. Otherwise limit switches do not work in ANALOG position control mode for firmware revisions 3 and below.
- B) Notice of change or addition: An RC position control mode can be accessed by placing the Motion Mind into mode 0 and setting the FUNCTION.RCPOS bit. In this mode the Motion Mind uses the analog feedback as the actual position and the RC signal as the desired position. Adjustment of the RCMIN and RCMAX registers will be necessary to get full-scale control. Limit switch functionality has been included in this mode. RC position control is available in firmware revision 4.

Firmware Revision 5:

- A) Notice of change or addition: Virtual limit switch functionality was added with the FUNCTION.VIRTLIMIT bit and VPLIMIT, VNLIMIT registers. The user may now program limit points into the device to prevent closed loop control modes from exceeding the desired points. Additional STATUS bits were included, and are asserted (set to 1) if a virtual limit is reached.
- B) Notice of change or addition: PWMLIMIT register was added that restricts the drive signal to the H-bridge to the PWMLIMIT setting. In systems where a full drive signal might cause excessive currents the PWM value can now be limited to a reduced value.
- C) Notice of change or addition: DEADBAND register (index 26) was added and is used to set the dead band (forces stopped motor) around 2.5V in bi-directional analog mode. This register may also be used to set a dead band around commanded positions in the closed loop modes (by setting the FUNCTION.ENABLERC bit). In firmware revisions 2,3,4 this was done with the RCBAND register.
- D) Notice of change or addition: FUNCTION.HEXMODE functionality was removed from ASCII READ commands.
- E) Notice of change or addition: FUNCTION.HEXMODE bit was replaced with FUNCTION.ACTIVESTOP bit. When set a stop condition ties the motor leads to ground.
- F) Notice of change or addition: FUNCTION.RCPOS is changed to FUNCTION.RCPOS-ENCFDBCK. In MODE0 setting this bit enables RC Position Control. In MODE5 setting this bit allows Analog Position Control to use an incremental encoder as the position feedback source.
- G) Notice of change or addition: DESIREDPOSITION (index27) the internal position value that the controller is attempting to reach can now be read by the user.
- H) Error: Executing a STORE of the VPLIMIT (index24) in ASCII communication mode incorrectly stores the value in the VNLIMIT register to EEPROM. For applications with an external controller the VPLIMIT value should be written on power-up. For stand alone applications it will be necessary to STORE the VPLIMIT value in binary mode (Solutions Cubed LLC test software can be used to do this).