

## **MDrive/MForce Motion Control firmware change summaries**

### **Version MDI3.013**

- Corrects an issue where a slew 0 (SL 0) command has no effect during a "move on move"

### **Version MDI3.012**

**NOTE: This update only impacts MDrivePlus models with Ethernet communications**

- Added forcing BaudRate to 115K when EtherNet option set and disallowed user access to it.
- Added limited functions for CE and ES (no party mode features) when EtherNet Option Active.
- Added disallowing user access to PARTY, QUEUED, CKSUM
- Removed test for RXIF at end of receive routine in UART\_isr to eliminate error 63's
- Added DG (disable global response) to ethernet disable list.

### **Version MDI3.011**

- Added work around for negative Velocity and Fixed small move at hi accl and decel with direction change problem.
- Removed LE (Logo Enable) mnemonic.
- Set Stack Overflow to 1 less than stack size, allows OE On Error) to be called.
- Added code to help from getting Character Overflow Error 63.
- Fixed setting PWM's in MFI drives.
- Improved Move On Move capability.
- Updated sign-on copyright message.

### **Version MDI3.010**

- Fixed swapped characters at 115200 baud.
- Fixed problem where CkSum, of received command, was incorrect when Stall occurred.
- Added Clearing of CheckSum, of received command, after ESC.
- Fixed up moving reporting while Slewing.
- Updated Copyright dates.
- Fixed problem where pressing ESC while in motion and trying to Save causes error.
- Added test for char overrun when receiving commands. Will generate and Error 63 when overrun occurs.
- Added "CRLF?" when overrun occurs.
- Fixed Trip counter for overflow.
- Fixed Stack over flow.
- Added second parameter to CP, new form is CP addr, clrvars  
addr: if 0 or blank clears entire program, else from addr to next RT or E  
clrvars: if 0 or blank leaves user variables untouched, else 1 = clear user variables.

### **Version MDI3.009**

- Fixed Move on Move issues
- Fixed when Slewing at less than VI, then slewing to 0 causing a jump to VI.
- Fixed ESC type not Initialized in Exec\_Init.
- Added converting SN to number when setting Rx or VA to SN.
- Fixed: CM=0 followed by a MA/MR followed by CM=1 doesn't start moving again.
- Added test of STAT/FAULT in main loop, generates EXT\_FAULT (75).
- Set CURRDLY when going into Follower mode.
- Fixed: Jog then Jog off then jog on while decelerating causes sudden stop. Cleared STOPPING bit in Drv\_Status when new jog in same direction called for.
- Added Numeric Enable flag (NE = 0 or 1, default = 1).

## Version MDI3.008

- Modified CP and PG to copy variables and flags from prev. to new flash sector.
- Fixed ES to clear to 1 on FD.
- Added new variable, PWMregs, to support MForce PWM Motor Registers.
- Fixed multiple Jog plus Motion problems.
- Fixed MSEL Reported incorrectly if EE=1.
- Changed so that CM is only disabled when IOs 7 & 8 set as inputs.
- Changed, when setting IOS 7 or 8 that they track each other.
- Added TR (Trip Relative) function.
- Added test for OT to limit value to  $\leq 255$ .
- Added Stall Testing when in Following Mode.
- Added Test for trying to set PM=1 while in following mode, its not allowed.
- Added Test to setting CM=1 to turn off PM if enabling Following Mode.
- Modified to allow setting of VARs while INPUT pending.
- Fixed TC's setting of PC (Position Capture).
- Fixed setting user variables that end in a number.
- Fixed OH.
- Added a reset of the TP register when EE is changed to 0 or 1.
- Fixed Stall problems.
- Fixed problem of missing echoed characters.
- Eliminated wait time when program is starting up and the IO settings becoming valid.
- Fixed Slewing again while ramping down to a SL 0.
- Added error (74) for trying to do IP or CP while in motion.
- Added error (41) for trying to do IP while PGM Running.
- Added: Resume will not start while in motion.
- Fixed Run-away condition while doing a move on a move.
- Added Queued Flag (QD = 0/1), Allows for queued communications.
- Added tests for acceptable values of VI and VM.
- Updated Copyright dates.
- Added error correction, at end of a move, count, limit is three tries to correct, then error (92) issued.
- Fixed HOMING when home sw. activated and released before motion stops.
- In MForce, Limited PWM settings to first three.  
On a read, the fourth parameter is the number of PWM writes available.  
On a write, the fourth parameter is the 2's complement check sum of the first three parameters.  
Must be valid in order to be able to write the PWM settings to flash.

## Version MDI3.006

- Added LIMIT Current to 67% MAX, when OPS\_100\_CUR option = 0.
- Added D5 to be Analog Filter. (running filter  $\gg$  runavg =  $((\text{runavg} * (\text{D5}-1)) + \text{currldg}) / \text{D5}$ ).
- Fixed condition where if IOs set to STOP and LIMITs, then LIMITs are not level sensitive.
- Fixed Trips so that they work when pgm is not running.
- Fixed directional problem with Move on Move.
- Fixed Problem with TC.
- Fixed Limit Sw. problem when PM=1.
- Fixed problem with short moves.
- Fixed Stop Sw causing running at VI.
- Fixed Moving Flag not waiting for motion to stop when stopping due to IO set as Stop Sw.
- Fixed problem with ESC causing motion when PM=1.
- Allows trips to continue when user program ends.
- Fixed problem with comments starting after the last character of command (no space separator).
- Fixed the restoring of SF from non-volatile memory.
- Added setting POS to current position after EE is set to 1.
- Reduce the time it takes to start PG mode.
- Fixed problem with Homing/Hold followed by MOVE Command.
- Fixed problem with a MOVE command while SL in progress.
- Fixed VC flag operation.
- Added disabling MOVEs (MA or MR) during Homing.
- Now allow a SL 0 when over an active limit sw.
- Added a test to prevent FD, PG or S while in motion, generates error 73
- Prevented On Error routine from executing when programming.

- Added parameter separators to stored program if entered by user.
- Cleaned up the appearance of List.
- Added: Resume will not start while in motion.

#### **Version MDI3.004**

- Added ability to do a Move while in motion.
- Added error if VI or VM set to ZERO.
- Added Flag to enable a global command to respond.
- Fixed problem with CE not showing correct value.
- HM doesn't work if OPS\_INDEX set to 0.
- Fixed problem where unable to re-enabled trips when trip settings have changed.
- Added the disabling of a trip when its settings have changed.
- Fixed problem of printing, where characters are switched.
- Added ability to set a BreakPoint, (BP addr,ct), while tracing or single stepping.
- Reduced the program space that a User's Program takes up.
- Added ability to put a plus in front of number: SL +12345.
- Fixed OnError when routine ENDS a program, not just RET.
- Added Fix for Hold not detecting Homing in progress.
- Added more Address tests for Flash Writes.
- Added Clearing of ucMODE when homing.
- Stopped Global Labels from writing to flash as they are entered.
- Fixed problem with POSCAP when using TC.
- Fixed program hang when Ht and Mt are set to zero.
- Early firmware MDrivePlus units required a space between the command and value with motion commands while variable assignments needed an equal sign. Users can now have either a space or equal sign between the command or variable and the value.
- Fixed problem with dropped characters in TX response

#### **Version MDI3.003**

- Changed FD to stop any motion before doing the return to Factory Defaults.
- Set TX\_EN low on power up.

#### **Version MDI3.002**

- Fixed trip functions.
- Clk Md Ratio not being set at initialization.

Source: <http://www.imshome.com/downloads/firmware.html>