



Release Notes for MPiec controller firmware

Release 2.2.1 Build 1

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1. New Features

Number	Summary	Release Notes
6569	Apply drive parameters from web interface	The web server has been enhanced to allow the user to send amplifier parameters from the controller backup files to the Mechatrolink amplifiers. This is useful as a second step after downloading the Archive.Zip project, or any time the parameter set from the controller must be copied to the amplifiers. This simplifies machine mass production situations as all components can be configured from the web server. The new web page is called "Drive Parameters" and allows setting the default or custom parameter set to the Mechatrolink amplifiers individually or all at once.
6675	Change MC_ReadParameter to return a value with no error for prm 1311 on 2600	Using MC_ReadParameter to read the Position Trajectory Sub Interpolation Filter (parameter 1311) now returns a value of 4. This value indicates that sub interpolation is always on when using an option style amplifier. Previous versions of firmware returned an error when reading this parameter on the MP2600iec.
6677	Zero controller abs encoder offset when Y_ResetAbsoluteEncoder FB is executed	As a user experience improvement item, the controller now initializes its "Absolute Home Offset" stored in battery backed RAM. Previously when the Reset Absolute Encoder function was executed, the function simply cleared the data in the encoder itself. This lead to confusion after the next power up, because the position value in the controller reported a very large value because it still included the invalid Absolute Home Offset. Unchanged, the position is still invalid until after MC_SetPosition has been executed, which causes the controller to recalculate the Absolute Home Offset and store it in battery backed RAM.
6720	Expose position scale to MC_ReadParameter	Added new parameters 1829 (PositionScalePerRev) and 1830 (PositionScalePerTick), available via MC_ReadParameter. Tick is an encoder count, and rev refers to one motor revolution.
6747	Add Parameters for CamOffsetRemaining and CamScaleRemaining	New parameters were added to allow the application program access to the remaining amount of cam adjustments currently in progress. 1533: CamOffsetRemaining (from Y_SlaveOffset) 1534: CamScaleRemaining (from Y_CamScale)
6748	Allow Y_Adjust blocks to execute simultaneously without aborting each other.	In firmware v2.2.1, the restriction limiting only one type of cam adjust block to run at a time (per axis) was removed.
6759	Enhance Project Archive to allow for User file to be retained if not updated by new archive	The Project Archive page on the web server has been enhanced to allow distinction between user data files and application files such that the archive and data files can be sent, updated, and removed separately. This is useful for retaining recipe data (typically CSV files) when upgrading a project archive.
6783	Identify generic Mechatrolink stepper motors at startup	Generic Mechatrolink Stepper support has been added. Controller part number requires -STP appended to the part number. Oriental Motor Alpha series is one of the vendors supported.
6787	Add parameter to read the axis type	The motor type is readable via MC_ReadParameter #1810. Possible types include: 0=servo, 1=VFD, 2=external, 3=virtual, 4=stepper.



2. Bug Fixes

The following issues were identified and fixed for this release.

Number	Summary	Details and workarounds prior to this version
5282	MC_Power.Status shows High (Enabled) even after Mechatrolink is down	When the Mechatrolink cable was disconnected, the controller could not communicate with the drive, and generated a controller watch dog alarm (0x23010001). The drives response to this same event is to generate an A.E50 alarm and disable. Since communications had been lost, the controller did not detect that the drive had disabled, so MC_Power.Status remained high.
5977	Modbus/TCP does not respond to messages for unit 0	The controller failed to respond to incoming messages with the Modbus/TCP unit ID of 0. Now the MPiec controllers will respond to ID 0 or 1.
6765	Configured axes block communication with inverter nodes	The wrong station address is being reserved for Mechatrolink communication causing communication with the inverter axis to fail. The controller is reserving the station address in the drive range instead of the inverter range.

3. Known Issues

Number	Summary	Release Notes	Workaround
4395	Large positions will not be displayed to full precision in the Web Server Java applet or the Hardware Configuration.	Positions greater than 2147483648.0 are written in scientific notation and will lose some precision when displayed in the applet or the Hardware Configuration. The position stored in the controller is not affected.	If possible, change the origin using MC_SetPosition or MC_StepRefPulse or change the position scale so that the full position can be seen.
4641	starting in supervisor mode shows extra web menu options	When controller is started in supervisor mode, the web menu shows all of the supervisor options immediately. Some options will require login before they can be used.	Login with the Admin password in supervisor mode.
5227	XML Config files are cached via web server	Deleting a project archive and uploading a new project appears to show user/config/startup/io.xml not updated to the new version. Actually it is updated, however the web browser has cached the old version.	Disable caching of XML config files in Internet Explorer.
5241	ProConOS communication task can use all available CPU with large OPC transfers	With large OPC transfers, the ProConOS communication task can starve lower priority tasks, making communication with MotionWorks IEC difficult. We have also noticed a 32KB limitation on OPC transfers.	Use smaller buffers and slower update rates.
5373	Controller hangs at startup with two Sigma II drives at the same physical node address	The ERR and MTX light will come on. This problem does not occur with Sigma V drives.	Ensure each Sigma II drive has a unique physical node address.

Number	Summary	Release Notes	Workaround
5521	CPU utilization is not accurate for MP2600iec when the IEC task and motion engine cycle are the same.	The CPU utilization always reports 0.1% when an IEC task runs at the same rate as the motion engine. To get more accurate utilization data, the scheduler must run more often than the user task and the user task must continue to execute over multiple scheduler cycles.	The individual task statistics MinDuration_us, CurDuration_us, MaxDuration_us stored in PLC_TASK_1 (etc.) are reported in microseconds, which is more useful for determining watchdog timers for tasks running at the same rate as the motion kernel.
5697	Slave cannot synchronize to a master with S curve applied	Cam and Gear applications will not follow another servo axis that has the S curve filter enabled.	Do not use an S-Curve filter on any master axis unless the slave has an identical S-Curve filter.
5724	PLC will enter the RUN state after a test move finishes in the Hardware Configuration	When attempting to start a program using the Project Control dialog while running a test move through the Hardware Configuration, the controller correctly prevents the PLC from entering the RUN state. In this case the resource dialog still shows the PLC in the RUN state as the request to enter RUN mode is pending. When the move finishes the PLC will enter the "RUN" state.	Do not RUN the PLC when the Hardware Configuration is performing a test move.
5915	Trying to enable the same axis with two MC_Power blocks at the same time results in internal motion kernel error.	Trying to enable the same axis with two MC_Power blocks at the same time results in internal motion kernel error.	Do not enable multiple MC_Power blocks on the same axis at the same time.
5965	If the SGD V is configured to use the Brake output on SO1, then none of SO1, SO2 or SO3 can be controlled over Mechatrolink.	SGDV firmware was changed	No workaround exists.
6036	Y_CamShift.Error remains high after Execute goes low	If there was an error, Y_CamShift Error and ErrorID remain high after Execute goes low.	
6343	EIP Multicast only works correctly on Port A (CN11A) of the MP2600iec.	Multicast Ethernet I/P data will only be broadcast over Port A (CN-11A). Consequently, Port B (CN-11B) should not be used for Ethernet I/P communication.	Use Port A (CN-11A) for Ethernet I/P communication.
6473	Repeated archiving operations eventually breaks archiving	Typically, the controller is rebooted immediately after sending the project archive, but if an archive project is sent to the controller more than 20 times in a row, then the controller starts failing semi-silently. There is no alarm or warning, but the Debugging Output starts to print the following error: [2011-07-07 15:39:39.210] error invoking web post request. FilteredZip Could not open specified archive	Reboot the controller.
6481	Different deceleration is used for MC_TorqueControl than for MC_Move... when a software limit has been exceeded.		If the axis does not decelerate quickly enough after exceeding a soft limit with MC_TorqueControl, then modify parameters Pn80D, Pn80E, Pn80F and Pn827.



4. Limitations

Unsupported Card Modules

JAPMC-PL2300-E	Counter Module
JAPMC-PL2310-E	Pulse Output Module

Unsupported Mechatrolink Devices

SGDH & NS115 with Linear Motor	
JEPMC-PL2900	Counter Device
JEPMC-PL2910	Pulse Output Device