



Release Notes for MPiec controller firmware

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Release 3.0.3 build 17

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1. New Features

Number	Summary	Release Notes
n/a	Support for MP3300iec controller	This is the first release version which officially supports the new controller model.
1482	Support network variables	Application data across multiple MPiec controllers can be shared in a Produce / Consume fashion. Network variables are defined in a network variable worksheet that is a new node underneath "Physical Hardware" in the Multiprog project tree. A new firmware library NVTCPUDP is also available with this feature. This is the initial release for network variables; multiple projects are required (one for each MPiec controller.) Future releases will support multiple controllers (Resources) per project and further simplify use.
5036	Support PLCopen Part 4 - Interpolation specification	This is the initial release for PLCopen part 4. The following function blocks are available: MC_GroupEnable, MC_GroupDisable, MC_GroupReadError, MC_ReadGroupStatus, MC_GroupReset, MC_GroupStop, MC_MoveCircularAbsolute, MC_MoveCircularRelative, MC_MoveLinearAbsolute, MC_MoveLinearRelative, Y_GroupDirectControl
6028	Logic Analyzer enhancements	New logic analyzer features require firmware 3.0.3 and MotionWorks IEC v3.0.3. Features include: Continuous trace logging, new choices for X sample units, strip chart mode (all channels superimposed over each other using full height of window.) and multiple trigger configurations can be saved.
6922	MP3200 processes data using big-endian format	
7315	Modbus memory moved to the %M area to allow read and write to registers. (MP3000 series only)	MP3000iec controllers now support bi-directional Modbus holding register data transfer. MotionWorks IEC v3.0.3 is required. The register area has also been increased from (1024 * 2) to 10000.

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8039	MP3000iec series: Support endian conversion for arrays of structures and structures with arrays	<p>Endian conversion support added for the following:</p> <ol style="list-style-type: none"> 1) Converting structures containing arrays 2) Converting structures containing structures, including structures containing arrays of basic types 3) Convert arrays of structures, including structures with arrays of basic types and other structures 4) Converting arrays of structures containing arrays of structures <p>Use the TO_LITTLE_ENDIAN function when transferring data between an MP3000iec series controller and other devices such as PC application programs when the endianess differs.</p>
8474	Support multiple IP addresses per network interface.	<p>Two function blocks were added to the Y_DeviceComm firmware library to support configuration of multiple IP address on a single Network Interface: Y_AddIPAddress and Y_RemoveIPAddress. This feature is also referred to as "Multi Homing".</p>
8681	MP3000iec controllers do not report Mechatrolink Alarm 23010008 as a controller alarm.	<p>When Mechatrolink III axes are configured but absent, the MP2000iec reported alarm 23010008.</p> <p>On MP3000iec series controllers with Mechatrolink III, the missing axis alarm is now attached to the axis rather than the controller as a whole. Y_ReadAlarms and Y_ClearAlarms only interact with controller based alarms that are non axis specific. On a Mechatrolink III controller, neither function block is aware of the alarms, and do not report or clear this particular alarm. Use MC_ReadAxisError and MC_Reset.</p>
8782	Firmware support for Axis Simulation mode	<p>A right click menu option has been added in the Hardware Configuration which allows toggling a Mechatrolink axis between physical and simulation mode. Servo, VFD and Stepper axes can be switched to Simulated Mode. While in Simulation mode, the drive parameters are retained in the Configuration. The behavior is similar to a virtual axis.</p>



2. Bug Fixes

The following issues were identified and fixed for this release.

Number	Summary	Details and workarounds prior to this version
7031	MC_Stop.Deceleration not being applied if MC_SuperImposed is executed without an underlying motion block	The deceleration value for MC_Stop was not used to decelerate the axis to a standstill if MC_MoveSuperimposed was in control of motion on its own (without an underlying motion block.) The two cases were: 1) MC_MoveSuperImposed without MC_MoveVelocity as a previous motion block. MC_Stop.Deceleration did not work. 2) MC_MoveSuperImposed with MC_MoveVelocity (0 velocity) as a previous motion block. MC_Stop.Deceleration works, however commanded velocity profile was incorrect.
7557	MP2600iec: Forcing Modbus bits in Function code 4 causes watchdog	This issue, which existed on the MP2600iec only, has been corrected.
7915	ServpPack outputs controlled via MPiec turn off during SVON command	ServoPack outputs controlled by the MP2300Siec and MP2310iec were turned off during the SVON Mechatrolink command, which typically lasted for 42ms, then they resumed their previous state.
8025	MC_StepLimitSwitch holds Error output on for 3 scans	PLCopen specification requires the Error output remain high for as long as the Execute input is high, or if the Execute input has already gone low before the completion of the function, the resulting function block output must be pulsed for one scan only.
8156	MPiec Ethernet/IP scanner did not support 500 byte instances	When an adapter was configured for a size greater than 496 up to 500 bytes, the incoming packet was not accepted by the MPiec scanner and resulted in a "Forward Close" command after the time out elapsed.
8210	Axis Jumps after MC_SetPosition with Mode=Relative	This issue only existed for function block input Relative Mode, and has been fixed.
8266	MC_Stop yields unexpected motion	A discontinuous motion profile (a step change in position) would result when MC_Stop was used with axes with S curve set. The level of the step change was dependant on the value of ServoPack Pn80E.
8746	Multiple MC_Stop function blocks for the same axis can cause failure to stop	New behavior accommodates multiple MC_Stop blocks without interaction issues: 1) Any instance of MC_Stop.Execute.TRUE will cause motion to stop and inhibit future motion until all instances of MC_Stop.Execute.FALSE for the given axis. 2) If an instance of MC_Stop is called conditionally with Execute = TRUE, (such as in ST or SFC) the same instance must be called with Execute = FALSE to remove the stop-state. 3) A PLC stop/start will clear all the associated internal stop-states since all function blocks are reset.

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	Booting up in supervisor mode shows extra 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.
5264	MODBUS server outputs are not retained on MP2300Siec and MP2310iec	In MotionWorks IEC, the Global Variables table contains a column labeled "Retain". Selecting a check box within this column causes the corresponding variable to be allocated in SRAM, however, for outputs (%Q), this feature is not working.	Please see this application note AN.MPIEC.12 on www.yaskawa.com Keyword search: 'retain'
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.
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.
5686	MPiec Modbus server seems to stop communicating	A modbus master can overload the controller and break Modbus/TCP communication if polling for data too often.	Adding a 5 ms timer between Read / Write queries avoids the issue.
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.

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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.
5948	CPU overload can occur on an MP2600iec under moderate load if I/O drivers are assigned to the Default task	A CPU overload can occur instead a watchdog if the Mechatrolink (dual port memory update) is set to 1 mSec and an application task is configured with a 2 ms interval, and I/O drivers assigned to the default task.	Make sure no I/O drivers are assigned to the Default task. Other options: Change the high speed task to 3ms, change the motion update to 2ms, or change the lower priority tasks to a longer period.
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.
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.

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6712	MP3200iec CPU architecture is not reporting maximal floats as NAN or INF	On the MP3200iec, the hardware floating point unit does not support IEEE 754. This means adding two floating points numbers that would normally cause an INF or NAN, will instead result in a maxFloat result. Example: 1.5e38 + 3.0e38 gives 3.4028235e38. In addition, in EN/ENO is enabled, ENO will remain "1" instead of normally becoming "0" when an overflow is detected.	User applications should check for overflow conditions.
7017	218IF-Y1 communication card is not supported on the MP3200iec	Planned for future release.	
7069	Applet cant connect to Machine Operations page (Cache settings issue)	Under certain circumstances, the Webservers machine Operations page will not work. See FAQ MTN-97PQWW for details on disabling the cache.	See FAQ MTN-97PQWW on www.yaskawa.com for details on disabling the cache.
7081	MIN, MAX and LIMIT with 64 bit data types when using EN/ENO are not supported on MP2600iec and MP3200iec		Create custom functions in ST or use functions from the Yaskawa and Math Toolboxes.
7448	MC_ReadParameter.Valid flickers multiple times when the web server's Machine Operations page > AxisParameters tab is selected	When MC_ReadParameter FB is set to read Prm 1311 and the user navigates to the web server and opens the AxisParams tab in the machine operations page, the various parameters are displayed, however at this point, MC_ReadParameters.Valid flickers multiple times. The FB behaves correctly because it says that the value is invalid when the wrong value is displayed.	Only read the parameter value when the Valid output is on.
7505	Attach PLC and other tasks to a secondary interrupt to ride through Mechatrolink Reset (Y_ResetMechatrolink)	The Mechatrolink interrupt is the main driver for all lower priority tasks in the MPiec controller. The application and communication tasks and I/O drivers stop executing during the time when the Mechatrolink network is resetting.	There is no workaround; this is scheduled to be fixed in future releases.
7574	MPiec as a Ethernet/IP slave disconnects from AB ControlLogix Master	The connection status is unstable when using older firmware in the Allen Bradley ControlLogix	Allen Bradley 1756-ENBT communication module requires fw 6.006 or higher.
7576	After Mechatrolink-III communication errors, the MTD2310 remote I/O module does not reconnect	Upon removing (and reconnecting) the Mechatrolink-III network connection, the MTD2310 remote I/O module shows a flashing red 'F'. Once in this state, the controller cannot read inputs or set outputs.	To clear this state, the MTD2310 must be powered cycled.
7606	MC_GroupEnable / Disable should not be used concurrently with Y_ResetMechatrolink		Use interlocks to prevent these function blocks from running at the same time.

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7609	Applet cant connect to Machine Operations page (Cache settings issue)		Check www.yaskawa.com for FAQ MTN-97PQWW for information on solving this issue.
8476	RAM available for applications on MP2300S firmware 2.6.0.152 and later is decreased.	There is less memory available from firmware version 2.6 and up due to enhanced controller functions.	
8751	INIT switch on 218IF-Y1 card does not work	The card cannot be set to the default IP address 192.168.1.1	
8764	MC_MoveCircular functions cannot perform a motion of exactly one revolution	New input AuxPoint2 will be implemented in future version.	Use two function blocks with smaller circle portions to complete a full circle.
8881	MC_MoveLinearAbsolute / Relative results in ErrorID 61713 if MCS coordinate system is specified.	MC_CoordinateSystem: MCS and PCS are not supported.	

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

MP3200iec and MP3300iec do not support the 218IF-Y1 [JAPMC-CM2301-E] card.