



Release Notes for MPiec controller firmware

Yaskawa America, Inc.

Release 2.6.0

MP2600iec and MP3200iec build 149

MP2300Siec and MP2310iec build 152

As a result of discontinuance of key parts and ongoing product improvements, Yaskawa Electric Corporation will be releasing a new revision to the CPU board in the MP2300Siec and MP2310iec controllers. Yaskawa America, Inc. expects to start shipping this new revision by late summer 2013. The hardware change improves Ethernet circuitry design, but will not change the performance of the controller.

One important side effect of this change is a firmware downgrade restriction.

- 1) Controllers shipped from the factory will be marked with a sticker indicating 2.5.0 firmware (or higher) was installed. These units cannot be downgraded to a version prior to 2.5.0.
- 2) Controllers originally shipped from the factory with firmware 2.4.0 or older can be upgraded to 2.6.0 and then downgraded again. A hard power cycle is required the first time after the web interface reports downgrade success and prompts for reboot. If a soft reboot via the web interface is performed instead, the controller will boot but will be unresponsive to the web interface. A hard power cycle will restore network functionality in this case.

Yaskawa America strives to minimize firmware compatibility issues, therefore we expect no issues should arise for applications running on version 2.6.0 firmware. However, if you have standardized on a particular firmware version, please plan to evaluate 2.6.0 for consistency with your existing application.

1. New Features

Number	Summary	Release Notes
7708	Increase Y_DeviceComm socket capability from 16 to 64	Increased the maximum number of user file descriptors from 16 to 64. This applies only to Ethernet connections user in conjunction with the Y_DeviceComm firmware library. It has no impact of the number of sockets available for all other communication protocols.
7162	Add functionality to monitor cumulative duration for EIP and MODBUS tasks	Users can now monitor the execution times for the Ethernet/IP and Modbus/TCP communication tasks. Since these communication tasks are not strictly cyclic tasks, the controller tracks the cumulative execution times, which the user may reset to zero using shared memory variables. ModbusTCP Task Timing as UDINT at %MD3.483184 EthernetIP Task Timing at UDINT %MD3.483192

2. Bug Fixes

The following issues were identified and fixed for this release.

Number	Summary	Details and workarounds prior to this version
7791	EtherNet/IP: EIP traffic routinely interrupted with Numatics adapter because TCP session is timing out	When the TCP connection was broken, the MPiec controller incorrectly marked the IO connection as dead and tried to reconnect the TCP connection. Now the MPiec controller will not try to reconnect the TCP connection if the UDP connection is still alive. Only when the UDP connection is broken, then the MPiec controller will try to reconnect.
7752	Remove device connecting to Y_DeviceComm sockets too quickly causes socket connections the client can't use	The maximum number of sockets was 16. If an application encountered this limit, then Y_AcceptConnection would accept the connection at a lower level and then forget about the socket. These sockets were never closed thus creating a resource leak. Consequently, clients would think the connection was established. Now the socket maximum for Y_DeviceComm is 64, and the resource leak is fixed.
7675	Socket remote peer disconnect not recognized	Y_ReadDevice now correctly detects remote peer closing the connection and return an error code.
7658	Vipa EtherNet/IP SLIO assumes T->O IP address is the same as the O->T IP address	Due to a change in the Ethernet/IP specification, Vipa Ethernet/IP SLIO did not send the T->O IP address for point to point connections as the MPiec controller expected. The MPiec controller now treats this IP address data as optional.
7655	MC_TouchProbe stays busy if executed rapidly on the external encoder	If MC_TouchProbe.Exececute was toggled at the Mechatrolink update rate, the function block would never report Done. Under these conditions, the latch was re-armed and fired before the next scan occurred, but the latch complete flags weren't reset and a rising edge was never detected. Now, the latch complete flags are cleared when the latch is cleared.
7582	Rotary Axis jumps and faults with A.D00 alarm when MC_Power is enabled after an MC_MoveSuperImposed executed	After MC_MoveSuperimposed completed, the superimpose command position was mistakenly still marked as 'valid'. Consequently, the moving average filter never completed, and the servo stayed in trajectory position control mode while the axis is disabled. On enable the axis would jump to the commanded position.
7566	MP3200 - DHCP hardware switch - ALM light is also on.	When the MP3200iec was configured for DHCP (Switch settings: E-INIT OFF, E-PM0 OFF, E-PM1 OFF), the MP3200iec posted a 34070206 alarm, "Unable to configure network interface" prior to being assigned a DHCP address. This alarm could be cleared after the DHCP server is assigned an IP address to the controller. Now, this alarm will only be posted if the controller fails to be assigned a DHCP address.

3. Known Issues

Number	Summary	Release Notes	Workaround
7915	ServpPack outputs controlled via MPieC are turned off during SVON (typically 42ms)	ServpPack outputs controlled via MP2300Siec or MP2310iec are turned off during SVON (typically 42ms) then resume their previous state. This will cause issues for outputs that are used to control something asynchronously with the SVON status. Outputs used only after the servo is already enabled are not affected.	For devices that must not be interrupted during servo enable, use another output source such as an LIO card.
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.
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.
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.
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.
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.
7017	218IF-Y1 communication card is not supported on the MP3200iec	Planned for future release.	
6922	MP3200 processes data using big-endian format	The MP3200iec uses a big endian processor, but Ethernet/IP and Modbus/TCP use a little endian data format on the wire. For native data types, such as INT, UINT, DINT, UDINT, LREAL, etc., the MP3200iec will correctly byte swap the data.	For user defined data types such as arrays and structures, the user must perform byte swapping in the IEC application. Tip: Use the BUF_TO_ function blocks from ProConOS firmware library.

Number	Summary	Release Notes	Workaround
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.
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.
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.
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.
5965	If the SGDv 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.
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.
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.
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.

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.
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.
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.
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.
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.
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.

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 does not support the JAPMC-218IF-Y1 card.