YASKAWA

Release Notes for MPiec controller firmware
MP3000iec and Sigma-7Siec release 3.3.0.251
MP2600iec release 3.3.0.253
February 6, 2017

New Features		
Number	**Summary**	**Release Notes**
7709	*Y_GroupPower* to enable Mechatrolink Groups	The new function block *Y_GroupPower* is available to power on or off all axes belonging to a group. This is similar to *MC_Power* but acts for the entire group.
7741	Linear moves support 'Aborting' buffer mode	`MC_BufferMode#Aborting` causes a smooth change in path to the new target position. If a change in path direction occurs as a result of `MC_BufferMode#Aborting,` the function block may not be followed by a move with `MC_BufferMode#Blending***`. The *BufferMode* input for the subsequent motion function block must be either `Aborting` or `Buffered` in this case, or the aborting motion must complete prior to executing the next motion function block.
9473	Tangent following is implemented.	The new function block *Y_SyncTangentAxisToGroup* is available to synchronize an axis to the tangent travel path of a 2-axis group. The master group's path travel in MCS coordinates is converted to a tangent angle as the continuous command position of the tracking tangent axis. The tangent axis must be aligned to the initial path angle before starting the master group move.
9562	New status monitors in *MC_GroupReadStatus*	Five additional outputs were added to *MC_GroupReadStatus*: StandStill, Interrupted, Synchronized Motion, Discrete Motion, and Continuous Motion.
9619 9984	Faster downloads to flash memory for MP3000 controllers	Download to flash performance was increased by approximately 3 times.
9676	Sigma-7Siec Ethernet ports operate as a hub	On the Sigma-7Siec the two Ethernet ports operate as an internal Ethernet switch, unlike the MP2600iec.
9732	S-Curve filter for group motion in the MCS	Axis group parameters 2110 and 2701 were added to support moving-average filters on command data in the machine coordinate system (MCS) frame. The filter is disabled by default. The settings can also be found in the Hardware Configuration.
9742	Master position for a tangent axis can be viewed	Controller parameters 1500-1503 now report the position of the master of a Tangent axis. The master is the vector path angle.
9779	Added *Y_BrakeRelease* to **YMotion** firmware library	*Y_BrakeRelease* function block can release the motor holding brake without servo on.
9798 9896	Delta robot support added with theta-axis control	Delta robots are now supported (including Rz control) with RBT controller option (PMC-U-MP3xxxRBT).
9801	Adjustable colinearity check for path segment entry/exit angles	A new AxesGroup parameter 2111 is available to adjust the colinearity angle check when blending circular and linear segments. Error code 8983 was added to signal insufficient colinearity when joining these segment types.
9843	Detailed error codes for PLopenPart4 blending errors	Specific error codes 8985 and 8992 were added for PLCopenPart4 moves. These codes show errors with acceleration and velocity limits while blending moves.

New Features

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9955 9985	Dedicated group inputs in `AXES_GROUP_REF` DataType	A new sub-structure was added to the `AXES_GROUP_REF` to hold the status of typical input data associated with a group. For Mechatrolink groups, this data can be optionally populated using the *Y_GroupInputs* function block. For MLX200 hosted robots, this data is automatically populated by the *MLX_Driver* function block. For either group type, the inputs aid in providing detailed error information at both the function block level and teach pendant.
9980	SigmaWin+ can be used through Mechatrolink-III (MPiec pass-through)	Hardware Configuration now enables Ethernet configuration for Mechatrolink Message Relay in MP3x00iec configuration files. (Auto Search is not supported by MPiec controller.) Supported versions: • SigmaWin+ 5 (v5.72 or later) • SigmaWin+ 7 (v7.11 or later)
10153	Improved error reporting when attempting to use move blending when it is not allowed	For PLCopen Part4 function blocks such as *MC_MoveLinearAbsolute*, *MC_MoveLinearRelative*, etc, ErrorID 9000 was created. This error is displayed if a `MC_BufferMode# Blending*` is requested but the blending is not supported for the given segments.

Bug Fixes

Number	Identified Issue	Details
9818	*MC_MoveCircular* in MCS caused error 8971 (Invalid Circle Geometry)	*MC_MoveCircular* now supports `MC_CoordinateSystem#MCS` and `MC_CoordinateSystem#ACS`.
10142	MP3300iec controller disconnected Ethernet/IP connection if adapter sends "negative" sequence number	The Ethernet/IP client system no longer disconnects when SequenceNumber is 0x80000000 or higher. When used as an adapter, the MPiec controllers, as well as most slave devices encountered, start with a SequenceNumber of 0, or some other small number.
10260	On MP2600iec, a customized Axis Name causes *MC_Reset* to fail without error	*MC_Reset* is now able to clear drive-side alarms such as A.d00.

Known Issues

Number	Known Issue	Details	Workaround
8751	INIT switch on 218IF-Y1 card does not work	The card cannot be set to the default IP address 192.168.1.1	Set IP address of the 218IF-Y1 card to an address other than 192.168.1.1.
7606	*MC_GroupEnable* / *MC_GroupDisable* should not be used concurrently with *Y_ResetMechatrolink*		Use interlocks to prevent these function blocks from running at the same time.
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.
7505	The application and communication tasks and I/O drivers stop running while *Y_ResetMechatrolink* is executed	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 will be fixed in a future release.
7234	BOOL value from comparison stays on for two scans	BOOL result from some function blocks (*AND*, for example) can stay on for an extra scan.	If *EN*/*ENO* connections are used somewhere in the LD network then this bug will not occur as the compiler will take another path. If you don't connect *EN*/*ENO* then the compiler will take the path with the bug. If at least one *EN*/*ENO* is connected in each network then the good path will be taken by the compiler.
6712	MP3200iec CPU architecture is not reporting maximal floats as NAN (Not a Number) or INF (Infinite)	MP3200iec does not support IEEE 754. As a result, adding two floating points numbers that would normally cause an INF or NAN error, will report that maximum floating point result instead. Additionally, *ENO* will remain TRUE instead of normally becoming FALSE as when an overflow is detected.	User applications should check for overflow conditions.
6481	Different deceleration is used for *MC_TorqueControl* than for *MC_MoveAbsolute* (or similar) when a software limit has been exceeded	When a soft position limit is exceeded, a position move (*MC_MoveAbsolute*, *MC_MoveRelative*, etc.) will be aborted and the axis will try to hold the last position. The axis is brought to a stop using the maximum available torque. In contrast, *MC_TorqueControl* will be aborted and the axis will decelerate according to parameters Pn80D, Pn80E, Pn80F and Pn827.	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	Sending archive file repeatedly can eventually cause archiving to fail without indication	Sending an archive to a controller more than 20 times without rebooting can cause the controller to fail without warning or alarm messages being displayed. Debugging Output of the web interface displays the following message:
		
		`Error invoking web post request.`
		`FilteredZip`
		`Could not open specified archive.`
			Reboot the controller.

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6343	Ethernet/IP Multicast only works correctly on Port A (CN11A) of the MP2600iec	Multicast Etherent/IP data will only be broadcast over Port A (CN-11A). Consequently, Port B (CN-11B) should not be used for Ethernet/IP communication.	Use Port A (CN-11A) for Ethernet/IP communication.
5965	Configuring a SERVOPACK to use a pre-configured output prevents IEC control of any SERVOPACK outputs.	If a SERVOPACK-defined function (such as /BK brake control) is assigned to any of the drive outputs (SO1, SO2, SO3), Mechatrolink is prevented from controlling any of the outputs.	No workaround exists.
5948	CPU overload can occur on an MP2600iec if I/O drivers are assigned to the Default task	A CPU overload can occur instead of the expected watchdog alarm if the Mechatrolink (dual port memory update) rate is set to 1ms and an application task is configured with a 2ms interval, with I/O drivers assigned to the default task.	Make sure no I/O drivers are assigned to the Default task or increase task rate for IEC scans to be faster than the Motion Update rate.
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 use multiple *MC_Power* blocks on the same axis at the same time. Yaskawa recommends that each axis have only one *MC_Power* block.
5724	PLC will enter the RUN state after finishing a test move in 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, but still indicates that the controller is in the RUN state with the request to enter RUN mode pending. When the move finishes the PLC will enter the RUN state.	Do not RUN the PLC when Hardware Configuration is performing a test move.
5703	MP2600iec can get watchdog alarm and bad CRC on restart	To reboot, the controller sends a software reset command to the drive. Since the drive is rebooting, it does not acknowledge the command.	Ignore these alarms in the alarm history.
5697	Slave axis cannot synchronize to a master axis that has S-curve filtering	Applications using camming and gearing will not follow a master 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.
5686	MPiec Modbus server seems to stop communicating	If a Modbus Master polls for data from the MPiec too often, the controller can be overloaded and slow Modbus TCP/IP communication slowed.	On the Modbus Master, add a 5ms (or longer) timer between read and write queries.
5521	CPU utilization is not displayed accurately for MP2600iec when the IEC task time and motion engine cycle time 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.
5460	`Y CamOut.DisenageData.End Mode=Immediate` is not supported	Disengage mode is not supported and will result in error 4400 – unsupported disengage mode.	Implement the same behavior by using the current master position as disengage position.

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5264	Modbus server outputs are not retained on MP2300Siec and MP2310iec	Outputs (%Q) variables are not being retained even if the RETAIN attribute is selected.	Please see application note AN.MPIEC.12 on www.yaskawa.com.
5227	XML configuration files are cached via classic web server	When a project archive is deleted and a new one installed, the classic web interface appears to show the old version of `user/config/startup/io.xml`. The file has actually been updated, but the web browser has cached the old version.	Disable caching of XML configuration files in Internet Explorer.
4641	With classic web server, booting up in supervisor mode shows extra menu options	When controller is started in supervisor mode, the web menu shows all menu options immediately even if the Admin user is not logged in. 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 interface Java applet or Hardware Configuration	Positions greater than 2147483648.0 are written in scientific notation and will lose some precision when displayed in the applet or 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.
4356	Axis state machine doesn't track superimposed moves	Executing *MC_MoveSuperImposed* without executing another motion block afterwards causes the axis to remain in the standstill state.	Executing another motion block after *MC_MoveSuperImposed* fixes the axis state.

Known Issues – Test Cases Passed with Conditions

Number	Summary	Test Condition	Workaround
TC1106	Program download prohibited while background FB processing is in progress	Download changes may not complete on MP2600iec.	Do not use download changes with MP2600.
TC2555	Must boot with M-III configured to run too fast for CPU	With MP3300iec, axes can be enabled when they display the "Insufficient CPU for motion" alarm, but motion is prohibited.	Do not allow MC_Power to execute when a controller alarm is present.
TC2805	URLs and automatic redirection for WebUI variations	Automatic URL redirection is not supported for Safari browser using Private Browsing mode.	Do not use Safari browser in Private Browsing mode.

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

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