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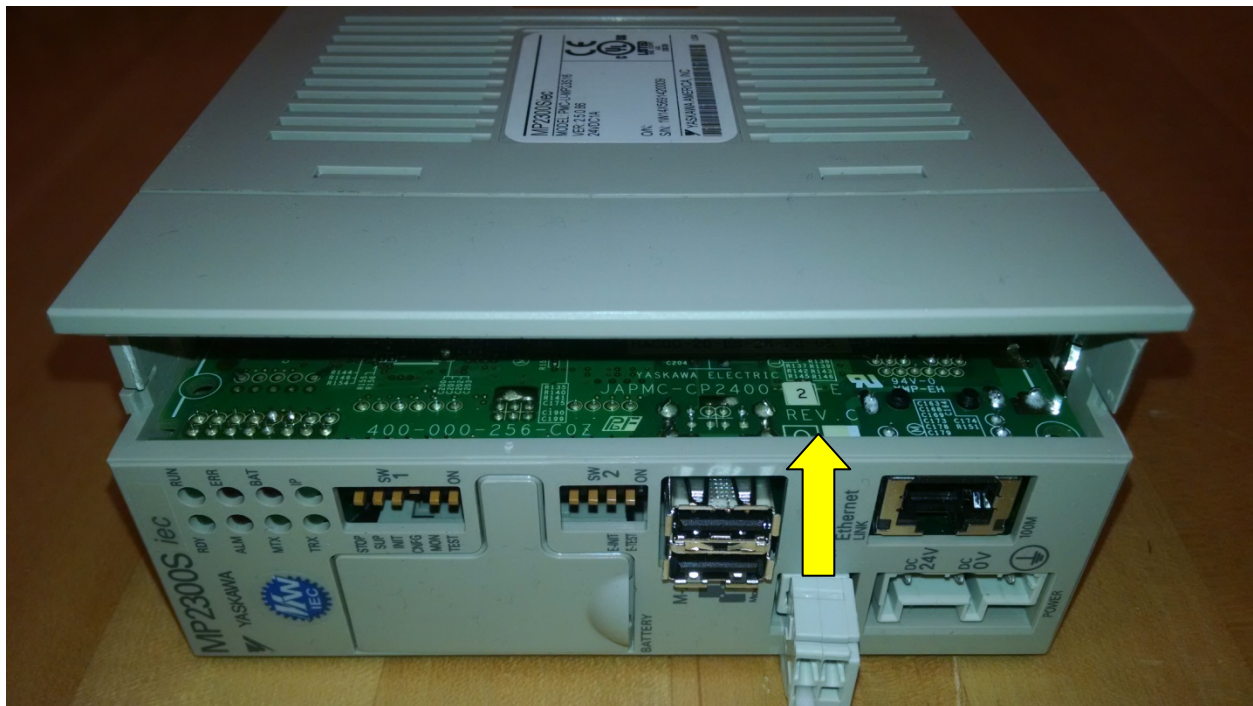
Release Notes for MPiec controller firmware

Release 2.5.3 build 1

Patch for MP2300Siec and MP2310iec only

Released July 16, 2015.

2.5.3.1 is a special release for the MP2300Siec and MP2310iec controllers with rev C hardware. To determine if the controller has rev C hardware, look at the silkscreen of the CPU board as shown below. If your machine was designed and tested using firmware 2.5.x firmware, Yaskawa recommends updating to 2.5.3.1 as the only difference is a change to eliminate the chance for impaired Ethernet performance as noted below.



1. Bug Fixes

The following issues were identified and fixed for this release.

Number	Summary	Details and workarounds prior to this version
9102	Impaired Ethernet performance on Rev C hardware	MP2300Siec and MP2310iec Rev C hardware can experience poor Ethernet performance leading to slow communications with firmware versions 2.5.1 and earlier. Previous to this release, communications could be slowed to 100 mSec response times or slower. When this condition occurred, the only remedy was to reboot to resume normal communication speeds.



Release 2.5.1 (build 3)

Patch for MP2300Siec and MP2310iec only

Released January, 2015.

Bug Fixes

SCR 8562 and 8603: CPU Watchdog was disabled

The CPU watchdog is connected to a relay output on the front of the MP2300Siec and MP2310iec controllers. If a CPU watchdog occurs, the relay should open. A CPU watchdog is different from a PLC watchdog. A PLC watchdog occurs if a user PLC task execution time exceeds its user configured watchdog time. PLC watchdogs most commonly occur when a user task is configured to run too frequently.

A CPU watchdog should occur if the motion kernel stops running. If the motion kernel stops running, all MECHATROLINK communication stops, causing all servo drives to go into a watchdog alarm state (A.E6) and servo off. The motion kernel can stop due to a motion kernel scan overrun or exception (alarms 11030102 and 11030103).

Release 2.5.1 was created to correctly support the CPU watchdog function on Revision C of the MP2300Siec and MP2310iec hardware. Revision C hardware started shipping from YAI in late summer 2013. The CPU watchdog function works correctly on Revision B of the MP2300Siec and MP2310iec hardware with firmware release 2.5.0.

The functionality of firmware 2.5.1 is identical to 2.5.0 with the inclusion of the CPU watchdog properly operating on Revision C hardware.

This table describes the behavior of the controller components with and without the CPU watchdog (WDT) functioning properly.

Component	MP2300Siec / MP2310iec Hardware Rev B, Firmware 2.5.x Hardware Rev C, Firmware 2.5.1 CPU Watchdog operating Behavior on motion kernel stop	MP2300Siec / MP2310iec Hardware Rev C, Firmware 2.5.0 CPU Watchdog inoperable Behavior on motion kernel stop	Impact
Mechatrolink servo nodes	Mechatrolink WDT occurs, drive disables in 4ms or less	Mechatrolink WDT occurs, drive disables in 4ms or less	No impact
Mechatrolink I/O nodes	Stops updating, and resets when CPU reset in 202ms	Stop updating, and disable due to I/O WDT after 512ms	300ms longer to disable outputs.
Option card I/O	Reset when CPU reset in 202ms	Reset on I/O card WDT stops after 512ms	300ms longer to disable outputs.
CPU and lights	CPU executes a warm reset in 202ms. After the reset the CPU starts with the ERR light on and there is alarm 14070103 (Watchdog timer expired) in the alarm history.	CPU does not perform a warm reset. The ERR light is not on. The ALM light is on due to Mechatrolink WDT error. There is an alarm code present for motion kernel error 11030102 (Motion kernel scan overrun), 11030103 (Motion kernel scan exception)	The user may not notice that the cause of the problem is a system failure alarm type.
Ethernet I/O (modbus and Ethernet/IP)	Ethernet/IP and modbus will stop on CPU reboot.	Ethernet/IP and modbus tasks will keep running.	Communications continue, however the PLC is not running.
Fault relay on front panel	Opens when CPU watchdog occurs.	Remains closed.	Relay is not opened.
PLC behavior	The PLC does not start up after the reset. Another power cycle is required to clear the 14070103 alarm and start the PLC.	The PLC will stop executing user tasks at the end of the current scan.	

In all cases the recovery procedure is to reboot the controller through the web interface or cycle power.