

**PRODUCT SERVICE ADVISORY**

**2094-BCxx-Mxx, Kinetix 6000 460V Integrated Axis Modules**

Ref: ACIG 2006-08-001

Date: August, 2006

Dear Rockwell Automation Customer,

The purpose of this Product Service Advisory is to inform you of a functional issue that exists with:

- 2094-BCxx-Mxx, Kinetix 6000 460V Integrated Axis Modules

This Advisory explains the functional issue and the steps being taken to rectify the situation.

**- Issue Description -**

With the 2094-BCxx-Mxx, the following functional issue exists:

**Functional Issue – Loss of Absolute Reference during Power Cycling**

Under specific application circumstances, it is possible to lose absolute position on the 2094-BCxx-xx modules (when using a motor with an absolute encoder) following a power cycle. These specific applications typically include high inertial loads (pumps, fans, blowers, etc) wired directly to the primary side of the voltage transformer providing 120/230 VAC auxiliary control power to the Kinetix 6000. In power down situations, the inertial loads can back feed power into the auxiliary power input, and provide false indication that the auxiliary power is still applied. As the inertial loads slow to a stop, the power degrades over time and will eventually drop below the operating threshold of the Kinetix 6000 control board.

When the control board power degrades below the operational threshold it is no longer possible to write to the controller memory, and the absolute position data cannot be saved. Most application conditions do not contain the identified occurrence and typical installations are not consistent with the observed functional issue.

**Absolute Position System Verification:SP**

The easiest way to verify that the absolute position system is working is to monitor the axisname.absolutereference status bit in RSLogix. The following list indicates software and/or drive firmware related items that will force the system to lose absolute position:

1. Successful Execution of a Non-Absolute MAH
2. Successful Execution of a MRP(Relative or Absolute)
3. Power cycle to a single turn rotary axis with Drive Resolution and Unwind NOT set equal
4. Reset drive to defaults via DriveExplorer
5. Drive faults E73 & E76

Under normal operating circumstances, the only hardware that the absolute position system is dependent on is the aux control power loss detection circuit. In general, when the control input power voltage is turned off, the control power loss detection circuit is triggered, and the absolute position save action will start. If the save was not completed, the axisname.absolutereference status bit will be set low in RSLogix on the next power up.

**-Temporary Workarounds -**

- Check that the firmware is v.1.88.08 or greater. Firmware v1.85.00 can experience communication issues on a low percentage of power up cycles, which can also lead to the loss of absolute position following a power cycle. Firmware v1.85.00 is unrelated to the hardware issue described in this Product Service Advisory, however the application symptoms may appear consistent. Please reference v1.88.08 release notes.
- This issue is very application dependent. Please contact Tech Support at (440) 646-5800 to discuss which workaround will work best for your system:
  - Power all I/O using an external power supply in an effort to reduce the decay rate of the control power DC supply.
  - Remove rotary loads from the Control Input Power supply circuit to eliminate regenerative energy from holding the power loss detection circuit on.
  - Increase Control Input Power voltage from 120V to 230V to provide more hold up time on the control board power supply.
  - Install an interposing relay to remove 120v single phase power from the drive when the main disconnect is actuated. This will immediately remove power and prevent regenerative energy from holding the power loss detection circuit on.

**- Product Identification -**

Product affected by this Mandatory Product Service Advisory includes all 2094-BCxx-xx Kinetix 6000 460V Integrated Axis Modules with date codes:

- 2094-BC01-xx and 2094-BC02-xx, Date Codes: July 1, 2002 (2602) - May 15, 2006 (1906)
- 2094-BC04-xx and 2094-BC07-xx, Date Codes: Nov 1, 2004 (4304) - July 17, 2006 (2906)

Date code verification can be found on the product label located on the back side of the Drive

**- Issue Correction -**

The functional issue described above has been corrected in the following versions of the Kinetix 6000:

- 2094-BC01-xx and 2094-BC02-xx, Date Codes: May 15, 2006 (1906) and later
- 2094-BC04-xx and 2094-BC07-xx, Date Codes: July 17, 2006 (2906) and later
- All 2094-BCxx repair hub has been updated as of August 7, 2006

**Installations experiencing this application specific issue after upgrading firmware to version 1.88.08 should contact their local Rockwell Sales or Support office for drive exchange.**

**- Requested Customer Action -**

Each notified customer should take the following actions:

- Confirm that they are experiencing this application specific issue and have product prior to the date codes listed above.
- Immediately contact their local Rockwell Automation Sales and Support office to determine the appropriate course of action. Together, the local office and customer will determine the correction for their situation.

If customers require any further technical assistance, they should contact Rockwell Automation Technical Support (440-646-3223 or RACleAskTheExpert@ra.rockwell.com) or their local Rockwell Automation Sales and Support office.

We require and appreciate your immediate cooperation in this matter. If you have any questions, please contact us.

Sincerely,

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