Reported Absolute Position May Be Incorrect

Purpose:

To advise customers of the solution to a problem which may cause POS.ABS@ to return the incorrect absolute position of a motor.

Revisions Affected:

All MAC-DA and MAC-DB Series motors with absolute encoders when used with ORION MotionBASIC® version 3.2g or lower, or Generation III MotionBASIC® version 2.2b or lower. MAC-DE Series motors, or any motors without the absolute feedback option, are not affected by this bulletin.

Description:

On MAC-DA and MAC-DB series motors with absolute encoder resolutions above 28,000 cnts/rev., the ORN-DSP processor may experience a counter overflow while reading the absolute position. This will only occur if the motor shaft is within a certain range of positions. The window of error is approximately 1.4 degrees wide. While the location of the window will vary from motor to motor, for a given motor, the error will be present at the same location on every revolution of the motor.

The consequence of this problem is that POS.ABS@ returns a value that may be incorrect. The magnitude of the possible error will be approximately 2 revolutions.

This problem may cause the controller to believe the motor shaft is in a different position from where it actually is. This could result in a hazard capable of causing personal injury or damage to machinery.

Recommendation:

ORION customers using MAC-DA or MAC-DB motors with an affected version of MotionBASIC® should contact ORMEC's Service Department and arrange for a warranty exchange of their PCC-SYS card for one containing a later version of MotionBASIC®.

Generation III customers should contact ORMEC's Service Department to obtain information on the availability of an updated version of MotionBASIC 2.2 under warranty.
Before calling the Service Department, please determine the exact part number for your present PCC-SYS card and any MBXs it may contain. Generation III customers will need to provide information on their present version of MotionBASIC® and any LEM's installed in the controller.