



Integral Loop Gain Enhancements for 1394 SERCOS Firmware v1.058

Introduction

The following information reflects integral loop gain enhancements made to the 1394 SERCOS firmware v1.058 for the 1394C-SJTxx-D Series C and Series D system modules. Use this document in conjunction with the:

- *1394 SERCOS Interface™ Multi-Axis Motion Control System Installation Manual* (publication 1394-5.20)
- *1394 SERCOS Interface Multi-Axis Motion Control System Integration Manual* (publication 1394-IN024x-EN-P)
- *ControlLogix™ Motion Module Setup and Configuration Manual* (1756-UM006x-EN-P)

Firmware Enhancement

Firmware v1.058 enhancements include rescaling the integral velocity and integral position loop gains by a reduced factor of 6. This rescaling factor helps improve the auto-tune operation and derived gains when integral gain is used.

Ensuring Proper Operation with Firmware v1.058

If you do not use velocity or position integral gains, there will be no impact on performance by installing firmware v1.058. However, to ensure proper operation if using velocity or position integral gains, refer to the following sections.

Upgrading a Series C System Module to Firmware v1.058

After you upgrade an existing 1394 Series C system module to firmware v1.058 without a hardware change, either use auto-tune to determine system gains or use previously existing parameters and increase the integral gain by a factor of 6. For example, if your original value is 10, applying a factor of 6 changes your value to 60.

Refer to the *ControlLogix Motion Module Setup and Configuration Manual* (publication 1756-UM006x-EN-P) for information regarding velocity and position integral gains.

Replacing a Series C System Module with a Series D System Module Firmware v1.058

If you replace a 1394 Series C system module with a 1394 Series D unit firmware v1.058, either use auto-tune to determine system gains or use previously existing parameters and increase the integral gain by a factor of 6. For example, if your original value is 10, applying a factor of 6 changes your value to 60.

Refer to the *ControlLogix Motion Module Setup and Configuration Manual* (publication 1756-UM006x-EN-P) for information regarding velocity and position integral gains.

Installing a New Series D System Module with Firmware v1.058

If you have a new 1394 Series D system module, use auto-tune to determine system gains.

For more information refer to our web site: www.ab.com/motion

For Allen-Bradley Technical Support information refer to: www.ab.com/support or Tel: (1) 440.646.5800

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