

## **TB280 (Rev1) – Quadrature and Differential Encoder Errors**

Differential and Quadrature Errors are typically caused by noise or the use of encoders that do not meet Centroid signal level specifications. To eliminate/reduce noise, always use shielded, twisted pair cabling. Also, do not route encoder cables next to cabling for high power, 3 phase or inductive loads.

**1. Confirm that you encoders meet Centroid signal specifications.** Centroid requires quadrature, differential line driver encoders that meet the RS422/423 specifications. In addition, the “low” signal level must be < .5VDC and the “high” must be >= 3.5VDC.

**2. A Differential Error is issued when the signal levels for “High” and “Low” do not meet Centroid specifications.** Centroid hardware will issue a Differential Error if either the “Low” signal is > 0.5VDC or the “High” is < 3.6VDC. While not recommended, it is possible to disable Differential error faults for encoders 1-8 by setting parameter 332 to 255. To disable Differential error messages for encoders 1-8 setting parameter 333 to 255. Additional information on parameters 332 & 333 can be found in the Operators Manual.

**3. A Quadrature Error is issued when the bit pattern for the encoder signal is not valid and/or does not match the expected pattern.** Quadrature errors are nearly always caused by noise. Because Quadrature errors can, and often do, effect machine position it is imperative that the problem (noise) be corrected. Because these errors often effect machine position, it is not recommended that theses errors be disabled. While not recommended, it is possible to disable Quadrature error faults for encoders 1-8 by setting parameter 334 to 255. To disable Quadrature error messages for encoders 1-8 by setting parameter 335 to 255. Additional information on parameters 334 & 335 can be found in the Operators Manual.

**To enter the parameter screen from the Main screen press:**

F1-Setup->F3-Config(pw=137 press enter)->F3 ParmS