11 Typical Sample Test Data

11.1 *Frequency Response*

The standard G100Z "LN Series" Gyro has the bandwidth set at 500 Hz (-3dB Point) in order to optimize performance of the sensor. The -90° Phase Shift occurs at 600 Hz.

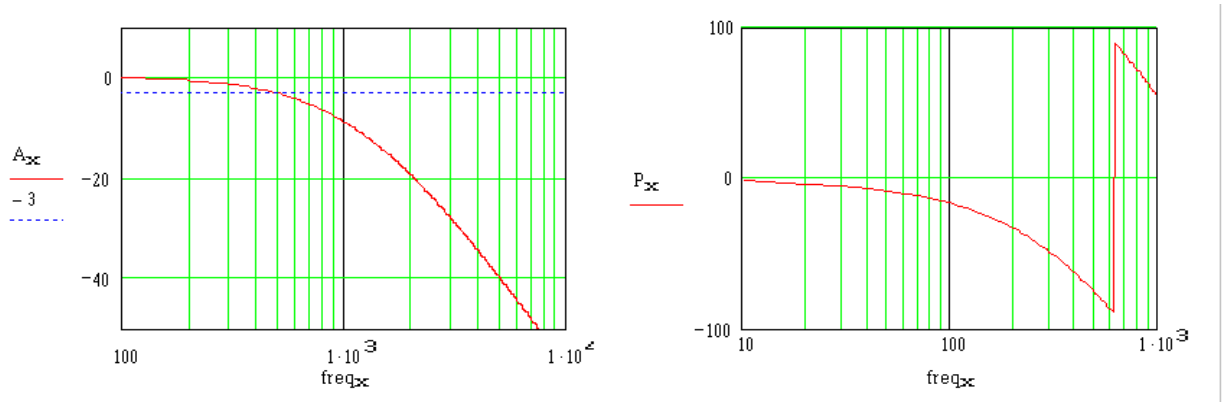

Figure 12: G100Z "LN Series" Frequency Response

Lower bandwidth options are available i.e. 100 Hz etc., and users should note that the decreased bandwidth will result in a slightly lower peak to peak noise.

11.2 *Angle Random Walk (ARW) Test Data*

Sample test data of various test parameters are depicted in the following graphs from a sample production of G100Z "LN Series" gyros. Serial number 100 corresponds to a 100deg/sec rate range unit.

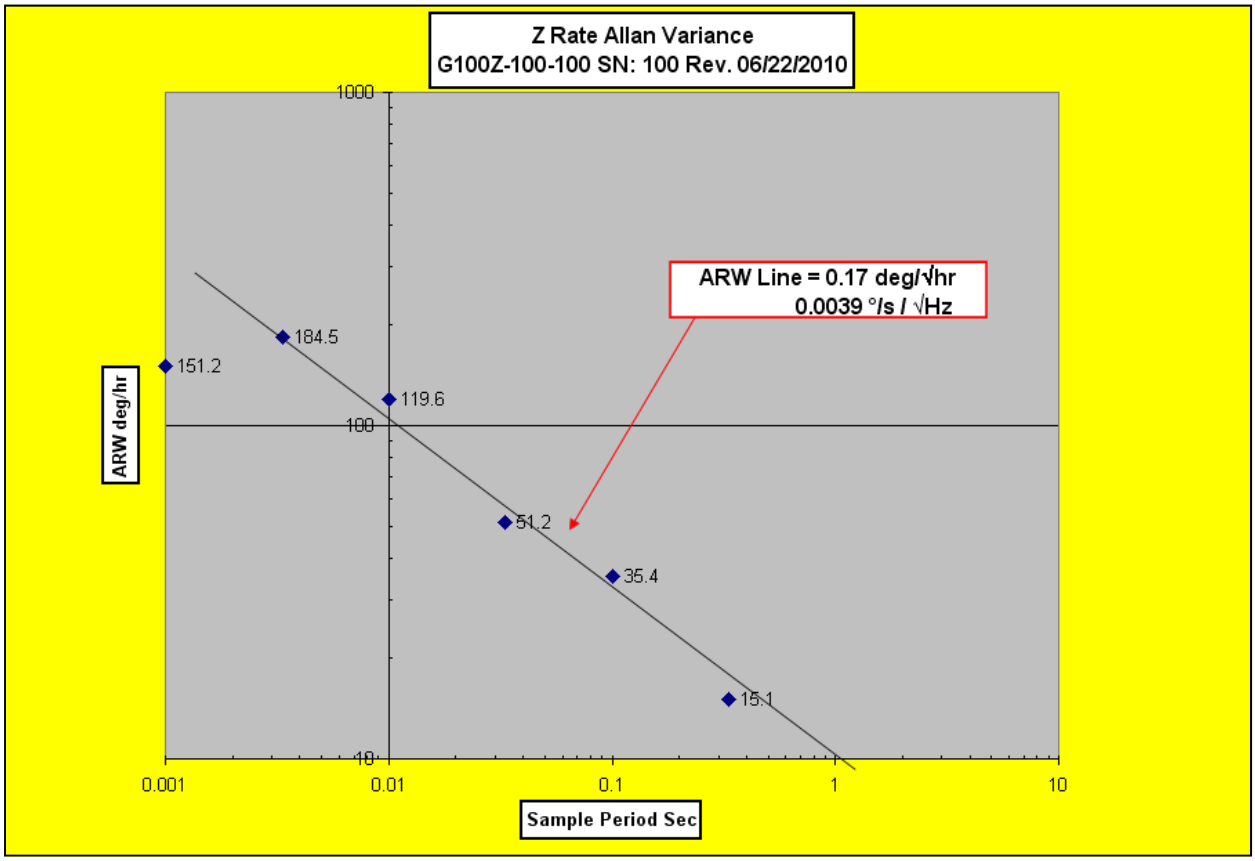

Figure 13: ARW for G100Z-100-100 SN: 100

Allan Deviation is used to analyze the affect the noise has on the sensor. The figure below shows Angle Random Walk (ARW) determined by Allan Deviation for the G100Z "LN Series". Data acquisition was taken for a period of 1 hour after a 15 minute warm-up period at ambient temperature. The graph also shows the ARW of 0.15°/√hour and a noise floor of 1°/hour for this 100°/sec rate range G100Z gyro.

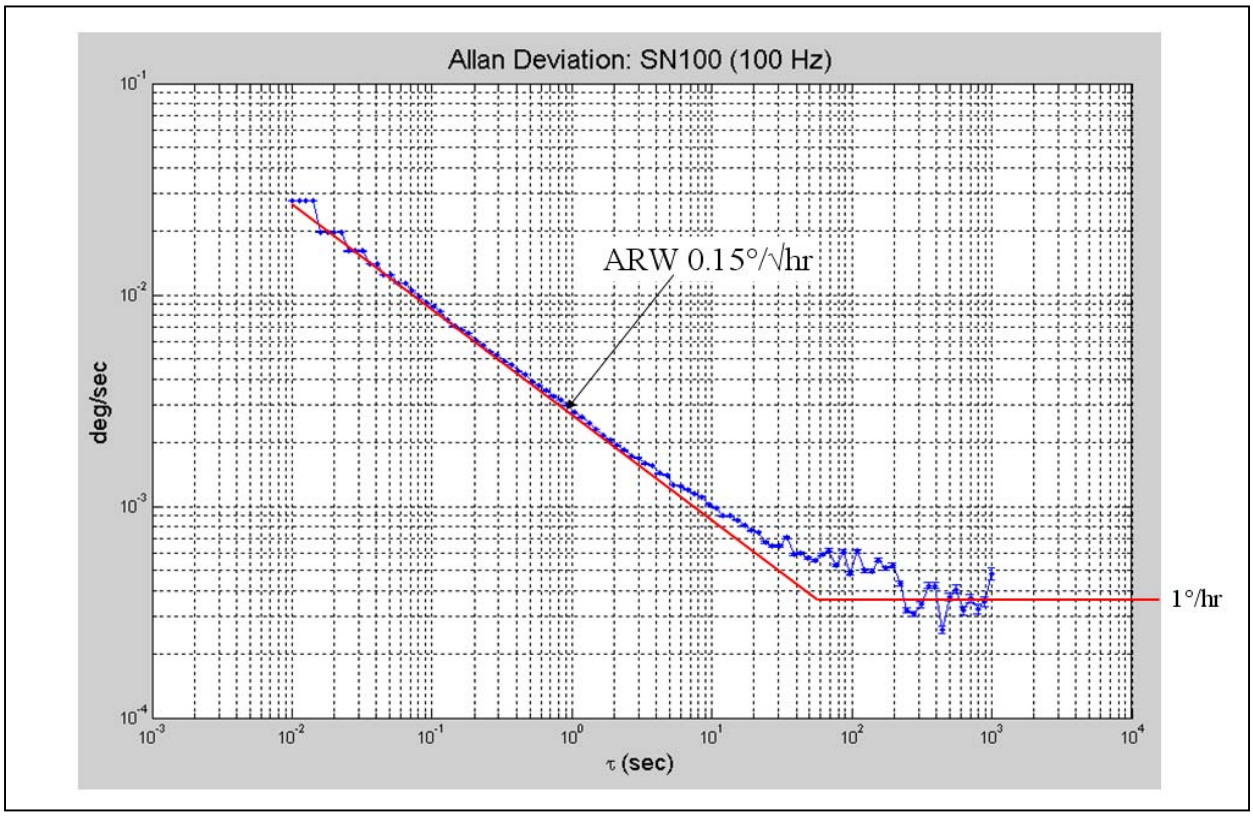

Figure 14: ARW from Allan Deviation for G100Z-100-100 SN: 100

11.3 *In-Run Bias*

In Run Bias from production G100Z "LN Series" Gyros is pictured below for user reference. The charts are in-run bias plots for the X channel gyro. The data was taken for 5 minutes after a 5 minute warm-up period at ambient temperature. The test conditions should be similar to what a user should likely have during initial setup approximately within 5 minutes after turn-on. If the user is not obtaining laboratory test data similar to the data plots and charts below or that accompany production units please contact the factory for consultation and assistance.

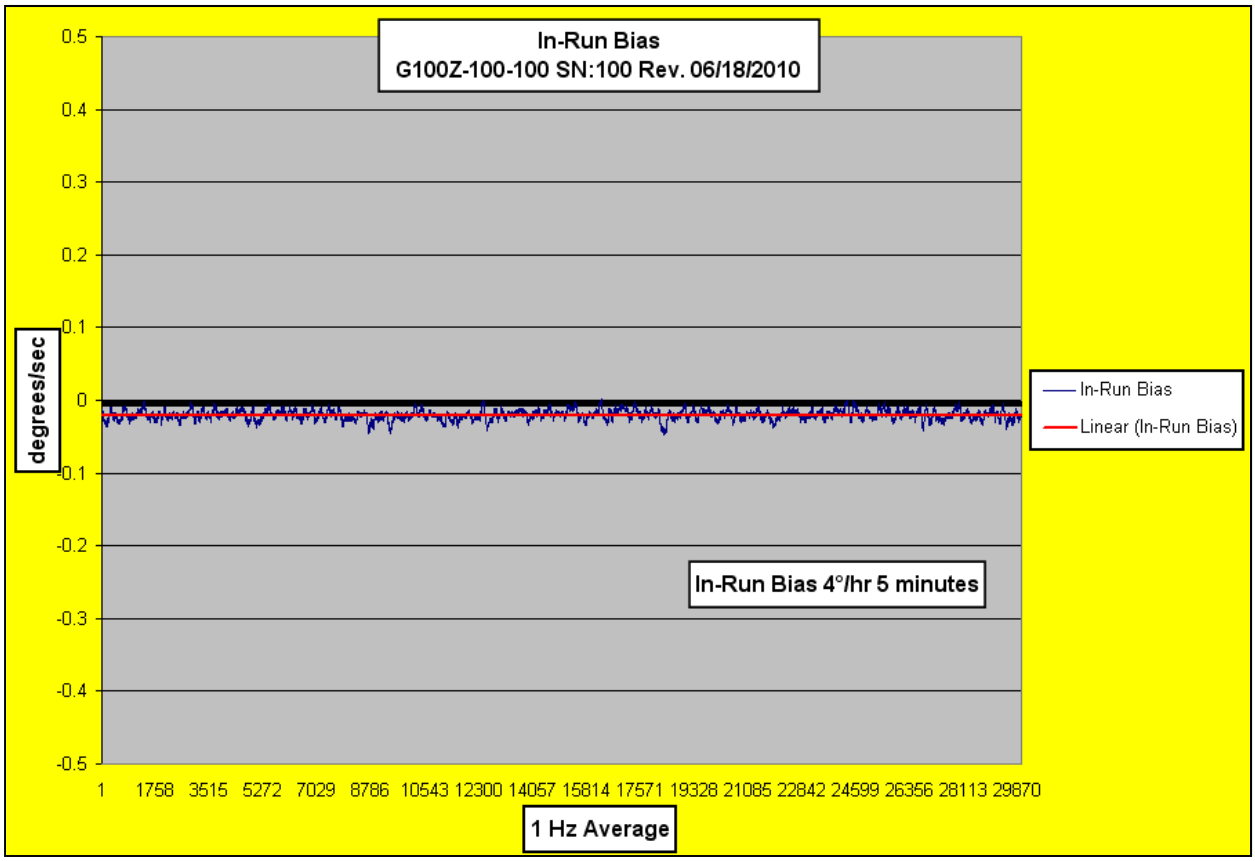

Figure 15: In-Run for G100Z-100-100 SN: 100

12 Bias and Scale Factor Over Temperature

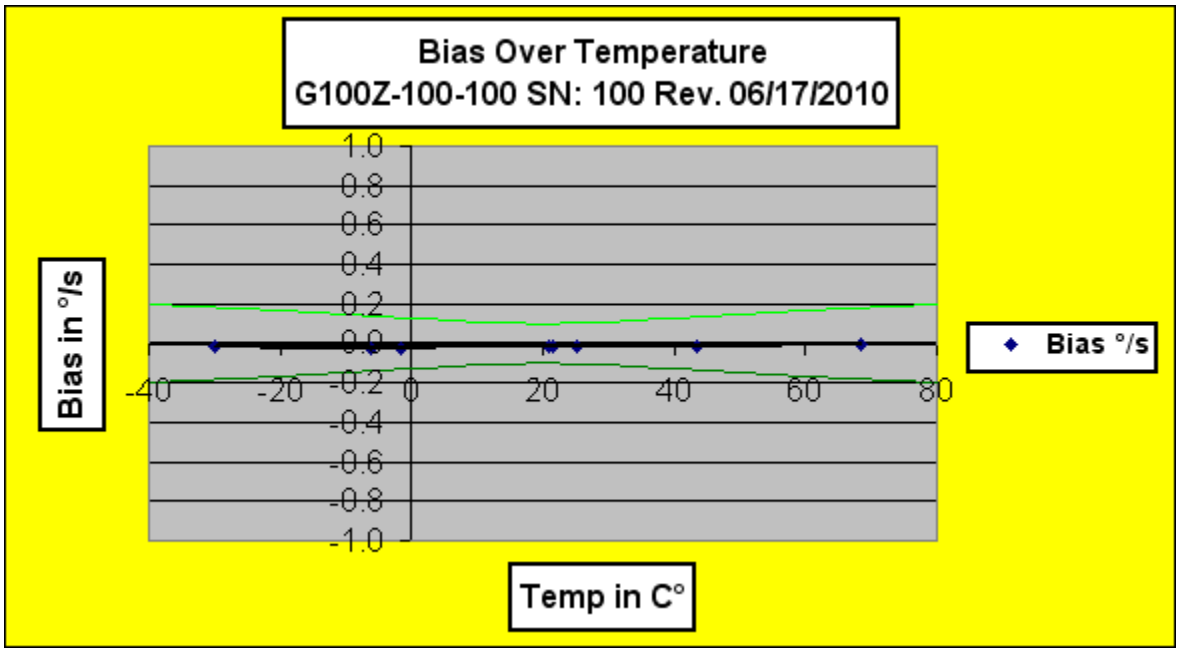

Figure 16: Bias Over Temperature G100Z-100-100 SN: 100

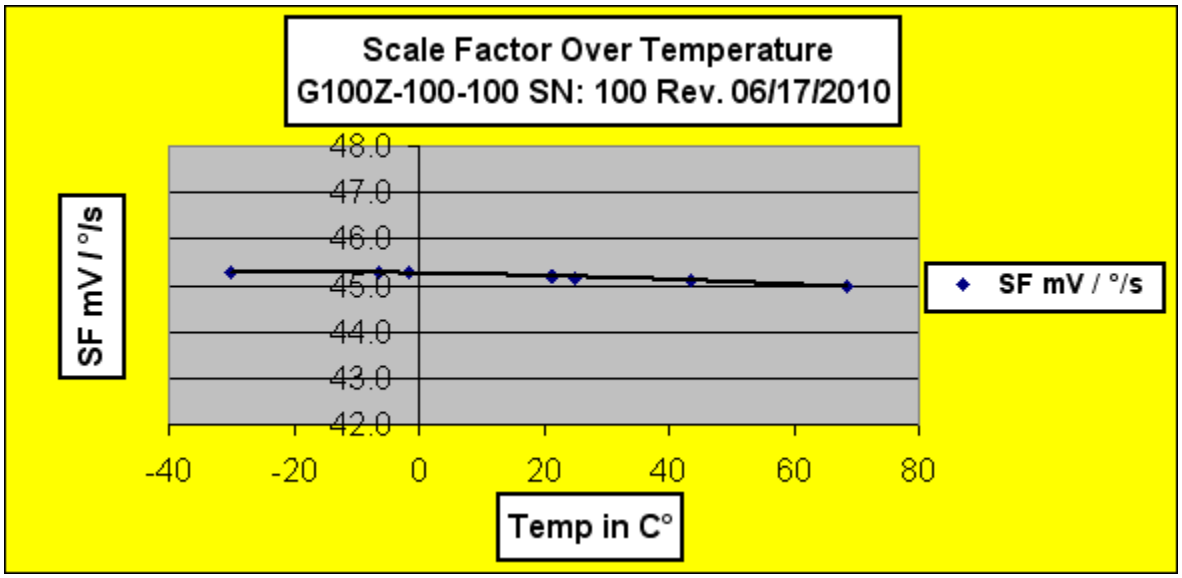

Figure 17: Scale Factor Over Temperature G100Z-100-100 SN: 100

13 Power Supply Sensitivity

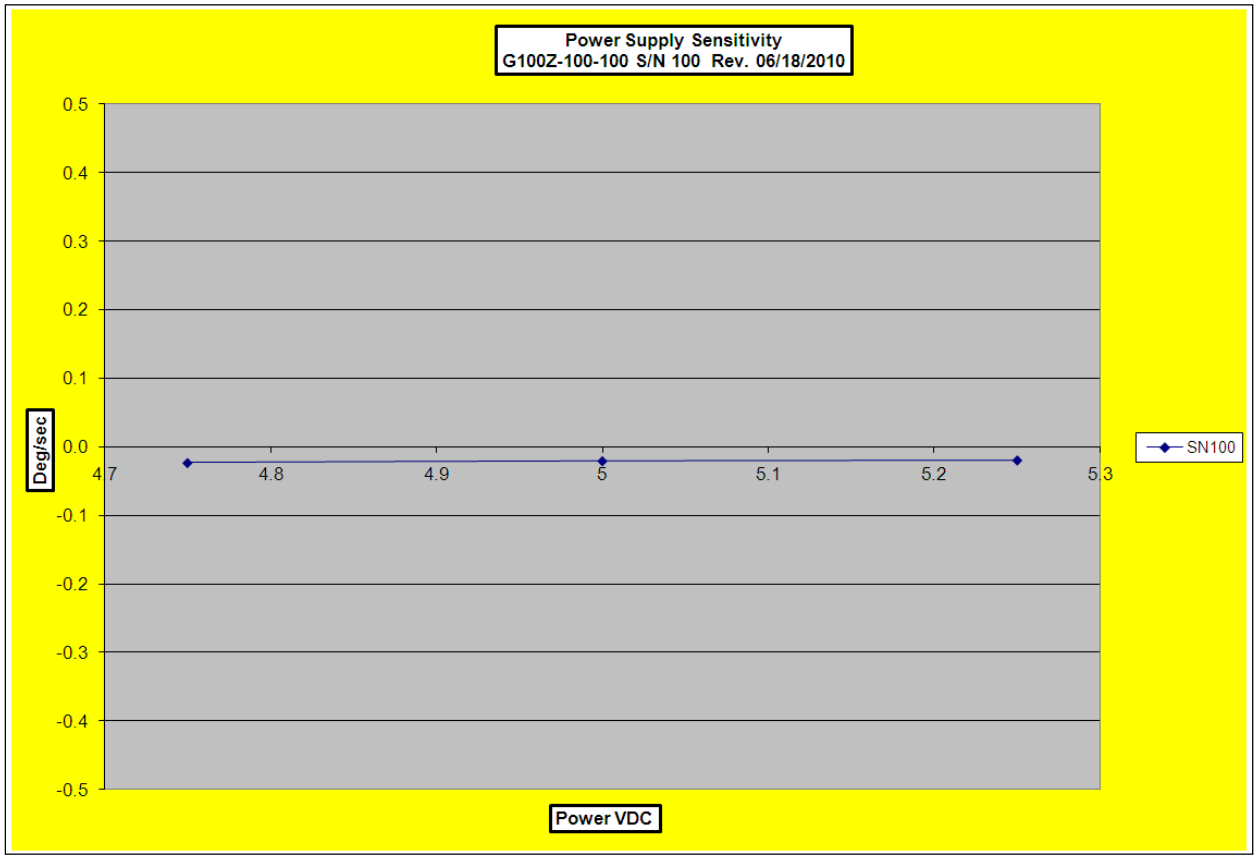

Figure 18: Power Supply Sensitivity G100Z-100-100 SN: 100

14 G-Sensitivity & Misalignment Performance Data

Mis-Alignment mrad	
9.0	Connector
0.5	Cross
G-Sensitivity °/s / g	
-0.003	Connector
0.004	Cross
0.004	Input
0.004	RSS

Figure 19: Misalignment & G-Sensitivity G100Z-100-100 SN: 100