

IEEE Std 529™-1980 (R2005)
(Supplement to
IEEE Std 517™-1974(R2005))

Errata to Supplement for Strapdown Applications to IEEE Standard Specification Format Guide and Test Procedures for Single- Degree-of-Freedom Rate-Integrating Gyros

Sponsor

Gyro and Accelerometer Panel

of the

IEEE Aerospace and Electronic Systems Society

Correction Sheet
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3.3.9.2.2, page 2, item 1) and item 2) should be corrected to read as follows:

1) *Temperature.* The change in command rate scale factor resulting from a change in steady-state operating temperature shall not exceed \pm _____ [((rad/s)/mA) $^{\circ}$ C, ((rad/h)/mA) $^{\circ}$ C, (($^{\circ}$ /s)/mA) $^{\circ}$ C, (($^{\circ}$ /h)/mA) $^{\circ}$ C].

This sensitivity can also be expressed in ppm/ $^{\circ}$ C.

2) *Magnetic.* The change in command rate scale factor resulting from a change in steady-state ambient magnetic field shall not exceed \pm _____ [((rad/s)/mA)/mT, ((rad/s)/mA)/G, ((rad/h)/mA)/mT, ((rad/h)/mA)/G, (($^{\circ}$ /s)/mA)/mT, (($^{\circ}$ /s)/mA)/G, (($^{\circ}$ /h)/mA)/mT, (($^{\circ}$ /h)/mA)/G].

This sensitivity can also be expressed in ppm/mT or ppm/G. Gyro axes and characteristics of the field shall be defined. If exposure to a varying field is required, the nature of the variation shall be described. Demagnetization may be necessary following exposure.

Page 3, 3.3.24, the text should be corrected to read as follows:

_____ \pm _____ [(rad/h)/(rad/s) 2 , ($^{\circ}$ /h)/($^{\circ}$ /s) 2].

It should be noted that anisoinertia can vary due to decoupling of the spin-motor moment of inertia from the moment of inertia of the gimbal in the presence of angular acceleration about the spin axis. The decoupling will occur at angular accelerations which exceed the pull-out torque capability of the motor.

Page 4, 3.6.4.1.1, text should be corrected to read as follows:

Sinusoidal: _____ [cm, in] DA (double amplitude) _____ to _____ Hz; _____ [m/s 2 , g] peak, _____ to _____ Hz. Sweep rate: _____ minutes per octave (continuous). Exposure time: _____ per axis.

Page 4, 6.3, the subscript "s" in the model equation is smaller than the rest and should be corrected in each instance as follows:

$$\begin{aligned} &+ D_{I1}a_1 + D_{O1}a_O + D_{S1}a_S \text{ (acceleration-sensitive drift rate)} \\ &+ D_{II}a_1^2 + D_{SS}a_S^2 + D_{IS}a_1a_S + D_{IO}a_1a_O \\ &+ \frac{(J_S - J_I)}{H} \omega_1\omega_S \text{ (anisoinertia drift rate)} \end{aligned}$$

Page 9, 10.7.3.1.6.1, the text should be corrected to read as follows:

Enclose the gyro in a temperature-controlled chamber. Stabilize the gyro at _____ $^{\circ}$ C \pm _____ $^{\circ}$ C for _____ [min, h]. Repeat selected procedures of [10.7.3.1.1, 10.7.3.1.2.] Record the gyro temperature in addition to the data listed in [10.7.3.1.1, 10.7.3.1.2.] Repeat the test at _____ $^{\circ}$ C.

Page 9, 10.7.3.4, the text should be corrected to read as follows:

Connect the impedance measuring equipment to the gyro torquer. Record the inductance and resistance at frequency and voltage settings of _____ \pm _____ Hz and _____ \pm _____ V.

For successful impedance matching with capture electronics, the second-order characteristics of the torquer may need to be considered.
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Page 16, 10.13.4.9, the fourth paragraph should be corrected to read as follows:

Calculate the output axis rate error $D_{\omega}(\omega_O)$ for each data point as follows:

$$D_{\omega}(\omega_O) = \omega_{IR} - \omega_O \sin \alpha$$

The maximum value of $D_{\omega}(\omega_O)$ shall conform to the requirements of Section _____.