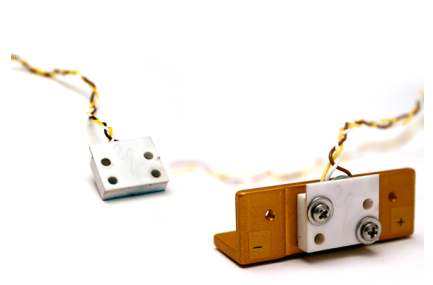


Geo Tech Note:

Impulse Response Of The 59579-02 Wide-Angle Sensor



Introduction

The following graphs show the response of the viscously damped [59579-02 Wide-Angle Sensor](#) to a sudden impulse. The impulse was generated by rotating the tiltmeter through angles of 19.8 and 4.4 degrees by pulling a gage block out from under the tooling ball at one end of a Tiltmeter Calibration Plate. The tests were performed at room temperature, about +25oC.

Results

The results of the impulse test can be seen in graphical form in Figures 1 and 2. These figures show two different step sizes, 4.4 and 19.8 degrees.

Inertia in the tilt sensor fluid causes a phase lag that appears as an overshoot at the start of the rotation. When the sensor comes to rest, fluid inertia causes a half-cycle of oscillation in the opposite direction. The initial tilt overshoot increases with step size.

Figure 1: 4.4-Degree Step
+25 Degrees Celsius

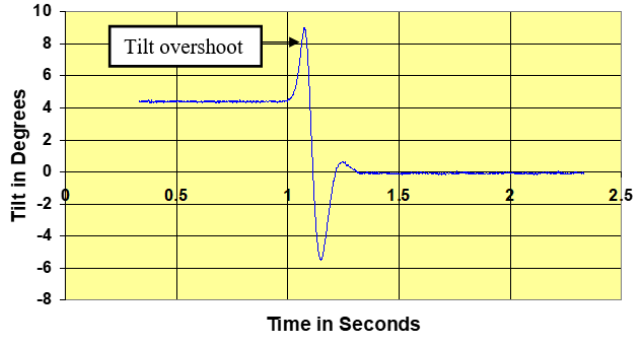
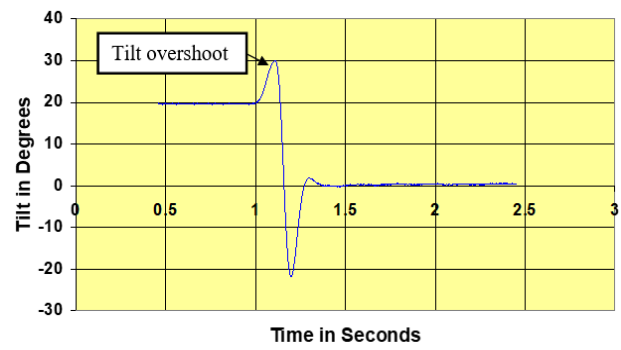


Figure 2: 19.8-Degree Step
+25 Degrees Celsius



Conclusions and Recommendations

The Model 59579-02 sensor is suited for all wide-angle tilt applications, including those in which machine vibrations might result in resonance in an undamped sensor. This sensor is used in the Model A711-2C(4X), D711-C, A801-W, A802-W, D801-W, D802-W, C801-W, C802-W, A820-W, C820-W, D820-W, in the Model 84064-02 Wide-Angle Sensor Assembly with mounting bracket, and is sold as the standalone Model 59579-02 Wide-Angle Ceramic Sensor.



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