

Abstract

A self-testing sensor (especially to measure an angular rate or acceleration) comprises a resonant structure 2, an actor unit (3a, 3b) to excite the structure (2) to a first periodic vibration, a piezoresistive element (5) to generate an output signal that depends on the measured quantity, and means (5) to isolate a test signal component from the output signal, whereby the test signal component is generated by a second periodic vibration of the structure (2) superposed on the first vibration. A device for self-testing a sensor has means to isolate (5) a test signal component superposed on a useful signal component from the periodic output signal of the sensor, and it has comparative means to compare the test signal component with a predefined value or a test signal fed to the sensor. For the self-test, a second periodic vibration is superposed on a first vibration of the structure (2), and an output signal containing information on the measured quantity is determined. A test signal component contained in the output signal is monitored.

(Fig. 1)