



MS2005+ Force Balance Servo Accelerometer

The MS2005+ is a uniaxial or triaxial, high dynamic range servo accelerometer based on state-of-the-art MEMS technology.

Its small dimensions, rugged and splash-proof design and excellent long-term stability make the MS2005+ the perfect match for seismic monitoring in structures and buildings.

The micromachined capacitive force feedback (servo) accelerometer in most applications outperforms traditionally used electromechanical FBA's. Using MEMS technology, this small high precision accelerometer shows environmental and reliability performance similar to integrated circuits. It's flat frequency and phase response together with the very low short- and long-term drift provides true engineering data that require no post-processing. The MS2005+ from SYSCOM comes factory calibrated, equipped with a fully comprehensive self-test function and requires no re-calibration.

Technical Specification MS2005+

Performance

Acceleration Sensing Element

Principle	The sensing element is an analog force feedback accelerometer featuring a variable capacitance, silicon bulk-micromachined acceleration sensor (MEMS) and a custom low-power mixed-signal integrated circuit (ASIC). The MEMS/ASIC custom design forms a DC coupled analog servo accelerometer.
Hysteresis	none
Noise 10-1000 Hz	typ. 2 $\mu\text{g}_{\text{peak}}/\sqrt{\text{Hz}}$
Natural frequency	>1000 Hz
Shock survival	3000 g (0.2 ms half sine)
Vibration survival	60 g (random noise 20-2000 Hz, Peak-peak)
Operating temperature	-40 to +85 °C

MS2005+ sensor

Measuring range	± 4 g linear, ± 5 g clip
Scale factor temp. drift (+1 g)	<100 ppm/°C
Zero point offset drift (± 1 g)	<300 $\mu\text{g}/^\circ\text{C}$
Orientation	triaxial, horizontal (floor mounting or vertical (wall) mounting)
Non-Linearity	<0.1% of full scale
Frequency amplitude response	constant 0 to 150 Hz (error <1%)
Frequency phase response	constant 0 to 50 Hz (error <1%)
Dynamic range	97 dB (DC to 100 Hz)
Supply voltage	± 6 V, $\pm 5\%$
Current consumption	~30 mA quiescent, 40 mA typical
Output voltage	± 4 V
Self-test	test-pulse
Cross axis rejection	>40 dB

Physical Characteristics

Housing	Aluminum, 80 x 80 x 60 mm (W x L x H)
Connector	Metallic self-latching push-pull connector with positioning key (LEMO)
Weight	0,5 kg
Protection degree	IP 65 (splash-proof)