

Accelerometers for Crash and Collision Impact Testing

Measurement Specialties now offers a complete family of vibration sensing products for automotive passenger safety testing:

- "Crush" zone test
- Side impact crash test
- SAE J211 footprint dummy crash test
- Child restraint systems test
- Sled test
- Road/load dynamics

Features and benefits include:

- Low cost
- Rugged design
- Miniature and subminiature designs
- Flexible Excitation (2, 5, 10 Vdc)
- 2nd generation MEMs technology
- Full scale to 2000 gs
- Extremely stable zero-offset
- Damage resistant Teflon -jacketed cable

25 YEARS 1981-2006
measurement
SPECIALTIES

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*This photo was provided courtesy of Kettering University

New Product

Model 52 - Miniature Crash Sensor for Auto Safety Applications

Measurement Specialties' new miniature Model 52 accelerometer for auto safety applications offers significant cost savings, ease of use and reliable measurements for test professionals. This low profile sensor was specifically designed for use in space-restricted environments where mounting options are limited and sensor cable access problematic.

The Model 52 is adhesively secured to the mounting surface allowing its flexible, 360 inch, 4 conductor cable to easily wind through various channels and obstructions to instrumentation and power supplies. This is the unit of choice for those crash tests where the sensor will be at most risk of being damaged. Its low cost significantly lessens the impact on program budgets compared to existing sensors in the marketplace. See complete specifications below.

New Product

Model 1202/1202F - New Self-Test Accelerometers for Crash/Impact Testing

The Model 1202 and 1202F accelerometers are small, compact uniaxial devices designed for vehicle impact and road testing. Their mechanical overload stops provide high shock protection in rugged applications. Featuring ranges from 50g to 1000g and frequency response to 3000 Hz, their sensors are easily mounted in hard-to-reach places on vehicles under test.

Built into each 1202 and 1202F MEMS die is a unique, patented (5,103,667, 5,253,510, 5,445,006) self-test function. This feature is implemented through circuitry that allows proof-mass deflection by induced electrostatic force. Simply by applying a fixed voltage in a specified manner, confidence in the unit's performance is as easily ensured during incoming inspections as it is just prior to a test. This offers a true functional check (electrical and mechanical) of the accelerometer and can be incorporated into sub-miniature and miniature sensors for installations not easily accessible for pre-test inspections. Specifications shown below.

On Vehicle Accelerometers



Model	52	1201/1201F	1202	1202F	1203	EGAX
# Axes	1	1	1	1	3	1
Range (g)	50 to 2000	50 to 1000	50 to 1000	50 to 1000	50 to 1000	5 to 2500
Sensor Technology	Piezoresistive	Piezoresistive	Piezoresistive	Piezoresistive	Piezoresistive	Piezoresistive
Signal Output	Unamplified	Unamplified	Unamplified	Unamplified	Unamplified	Unamplified
Nominal Sensitivity (mV/g)	2 to 0.15	2 to 0.15	2 to 0.15	2 to 0.15	2 to 0.15	10 to 0.1
Nominal Weight (grams)	1	2	2.5	2.5	20	From 0.5
Approx. Size: (LxWxH - inches)	0.35 x 0.19 x 0.13	0.35 x 0.63 x 0.40	0.35 x 0.63 x 0.40	0.35 x 0.63 x 0.40	0.57 x 0.57 x 0.60	0.30 x 0.18 x 0.18
Frequency Response (Hz)	0 to 5k	0 to 3k	0 to 3k	0 to 3k	0 to 1.5k	0 to 3k
Mounting	Adhesive	Adhesive	Screw	Screw	Screw	Adhesive
Applications	Miniature - side impact	On vehicle	Self-test feature	Self-test feature	Road Test Triaxial	Micro-miniature

On Vehicle Accelerometers In Dummy Accelerometers



Model	3255	4610	61	62	64	EGCS-S425
# Axes	1	1	1	1	1	1
Range (g)	25 to 500	5 to 500	50 to 2000	50 to 2000	50 to 2000	50 to 2000
Sensor Technology	Piezoresistive	Piezoresistive	Piezoresistive	Piezoresistive	Piezoresistive	Piezoresistive
Signal Output	Amplified	Amplified	Unamplified	Unamplified	Unamplified	Unamplified
Nominal Sensitivity (mV/g)	80 to 4	400 to 4	3 to 0.08	2 to 0.15	2 to 0.15	3 to 0.08
Nominal Weight (grams)	1.5	6.6	5	1	1	5
Approx. Size: (LxWxH - inches)	0.53 x 0.30 x 0.16	0.85 x 0.95 x 0.28	0.75 x 0.75 x 0.5	0.47 x 0.40 x 0.20	0.47 x 0.40 x 0.20	0.58 x 0.39 x 0.20
Frequency Response (Hz)	0 to 1.5k	0 to 1.5k	0 to 5k	0 to 5k	0 to 5k	0 to 4k
Mounting	PC Board	Screw	Screw	Screw	Screw	Screw
Applications	Shock Monitoring	General Testing	Dummy - headform	In dummy	In dummy	Sled



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