ENDEVCO
AN AMPHENOL COMPANY

Sensing solutions for automotive safety testing

Since the earliest days of vehicle safety testing, Endevco has worked with OEMs, test laboratories and ATD manufacturers' design and test personnel to ensure accurate measurements of front, side and rear impact; crush zones; in-vehicle occupant and pedestrian safety. High-precision, DC responding Endevco piezoresistive accelerometers are widely specified within these applications, due to their high-output, low mass designs and compact size for mounting within difficult-to-reach areas. Their survivability, miniature size and DC response measurement capabilities offer solutions for a diverse set of automobile testing requirements.

Applications

> Pedestrian safety study

> Frontal, rear and side impact

> Vehicle roll-over test

> Global regulatory compliance testing

> Anthropomorphic Test Device (ATD)

> Vehicle crush zones and crash sleds

> SAE J211, J2570 and ISO 6487 compliant

> Standard equipment on all ATDs

> Highest sensitivity

> Small and lightweight

> Rugged to 10,000g

> Gas damping



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Endevco® accelerometers were used to create the original specifications from the U.S. National Highway Traffic Safety Administration. Endevco was also instrumental in the research and development of now standard safety features such as seat belts, dashboards, steering wheels and safety door locks.






Anthropomorphic Test Dummies (ATD) Accelerometers

Model number	7231C	7264B	7264C	726CH
Description	ATD standard Undamped Optional cable	In-dummy applications Undamped Center CG location	Industry standard on ATD Undamped Meets SAE J211 / J2570	SAE J211/J2570 Compliant Multi-mode damping High sensitivity
Linear range g	±750	±500 / ±2000	±500 / ±2000	±2000
Sensitivity mV/g typical	0.20	0.80 / 0.20	0.80 / 0.20	0.30
Frequency response ±5%, Hz	0-2000	0-3000 / 0-5000	0-3000 / 0-5000	0-5000
Shock limit g	2500	5000 / 10,000	5000 / 10,000	10,000
Excitation ratiometric (Vdc)	2 to 10	2 to 10	2 to 10	2 to 10
Dimensions mm (in)	12.7 x 19.05 x 22.9 (0.500 x 0.750 x 0.900)	12.2 x 10.2 x 4.7 (0.48 x 0.4 x 0.185)	10.16 x 10.16 x 5.13 (0.400 x 0.400 x 0.202)	10.16 x 10.16 x 5.13 (0.400 x 0.400 x 0.202)
Weight gram	24	1	1.4	1.4
Mounting method	10-32 detachable stud	0-80 screws	0-80 screws	0-80 screws







Vehicle Impact Accelerometers

Model number	701AH / 701FH	757AH / 757FH	758H
Description	Rugged Al housing Multi-mode damping 28 AWG cable	Small and lightweight Multi-mode damping Flexible cable	Multiple mounting surfaces Multi-mode damping 28 AWG cable
Linear range g	±1000	±2000	±2000
Sensitivity mV/g typical	0.30	0.30	0.30
Frequency response +/-5% Hz	0-4000	0-3000	0-4000
Shock limit g	10,000	10,000	10,000
Dimensions mm (in)	8.90 (0.350) cube (AH) 8.90 x 15.88 x 9.65 (0.350 x 0.625 x 0.380) (FH)	9.7 x 4.8 x 3.3 (0.380 x 0.190 x 0.130) (AH) 11.18 x 10.2 x 3.8 (0.440 x 0.400 x 0.150) (FH)	13.97 x 6.35 x 6.35 (0.550 x 0.250 x 0.250)
Weight gram	1.4 (AH); 1.7 (FH)	0.5 (AH); 1 (FH)	2.0
Mounting method	Adhesive (AH); 2-56 screws (FH)	Adhesive (AH); 0-80 screws (FH)	Adhesive

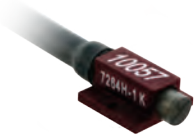
The company has worked closely with the U.S. National Institute of Standards and Technology (NIST) as well as with other worldwide metrology and measurement institutes to develop new calibration methodology and the equipment used in today's automotive design and testing facilities.







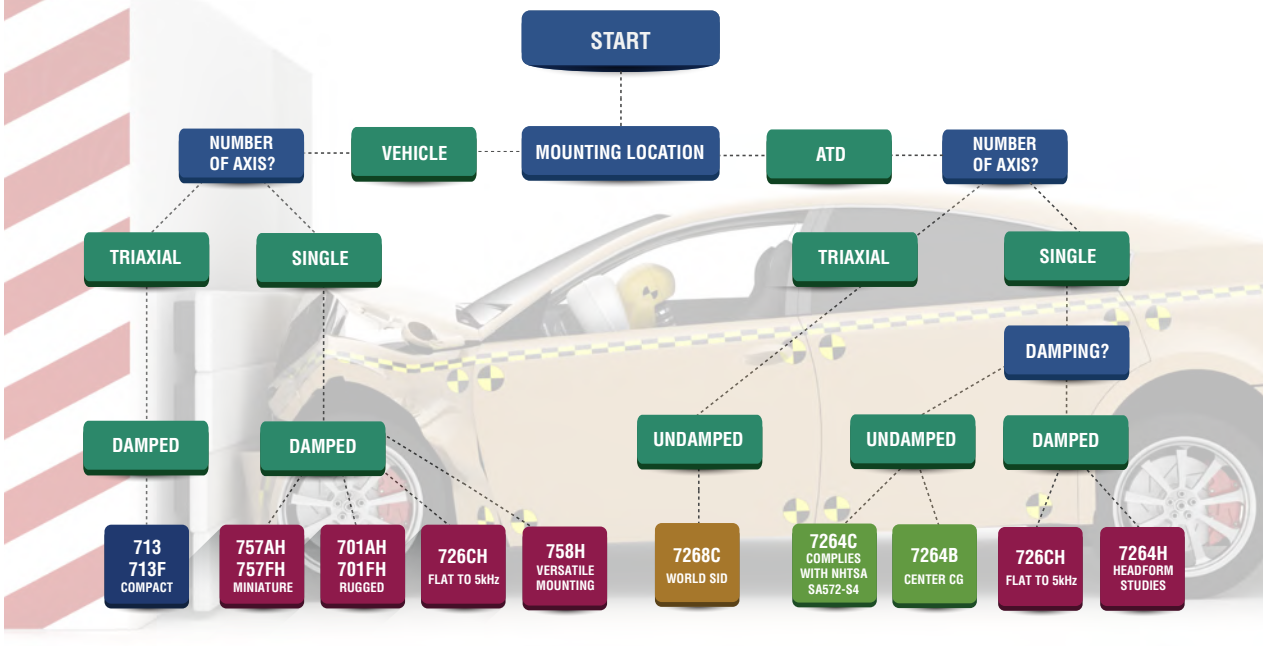




Triaxial Accelerometers		
Model number	**7268C**	**713 / 713F**
Description	Miniature triaxial Undamped World SID ATD	Triaxial Multi-mode damping High sensitivity
Linear range g	±2000	±2000
Sensitivity mV/g typical	0.20	0.30
Frequency response ±5%, Hz	0-3000 (z) 0-1500 (x, y)	0 to 1500
Shock limit g	10,000	10,000
Dimensions mm (in)	12.70 x 14.73 x 10.67 (0.500 x 0.580 x 0.420)	16.0 x 16.0 x 10.29 (0.4630 x 0.630 x 0.405)
Weight gram	8	7.5
Mounting method	M2 screw	Adhesive or 2-56 screws

Pedestrian Safety Accelerometers	
Model number	**7264H**
Description	Meets SAE J211/J2570 Multi-mode damping Flat to 20kHz
Linear range g	±2000
Sensitivity mV/g typical	0.30
Frequency response ±5%, Hz	0-6000
Shock limit g	10,000
Dimensions mm (in)	10.16 x 10.16 x 5.13 (0.400 x 0.400 x 0.202)
Weight gram	1.4
Mounting method	0-80 screws

ENDEVCO AUTO SAFETY SELECTION CHART



- Damped triax
- Damped single axis
- Undamped triax
- Undamped single axis

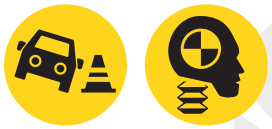
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Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco® synonymous with reliability.

Please contact Applications Engineering at **866 - ENDEVCO** to discuss your unique requirements, or visit **www.endevco.com**

Endevco piezoresistive pressure sensors have the fast rise time and durability desired for many automotive development applications. Endevco's MEMS sensing elements combine high resonance with high output while still maintaining exceptional linearity and hysteresis. Popular models for airbag and ABS testing are listed below, but Endevco has many options and models to suit your application.







Pressure Sensor	Airbag/ABS Studies	Side Impact
Model number	**8530BM37**	**8510B**
Description	Absolute Detachable cable Rugged	Gage Vent tube Temp compensation
Full scale pressure psi	200 / 500 / 1000 / 2000	1 / 2 / 5 / 200 / 500 / 2000
Sensitivity mV/psi	1.5 / 0.6 / 0.3 / 0.3	200 / 100 / 60 / 1.5 / 0.6 / 0.15
Resonance frequency kHz	750 / 1000 / >1000 / >1000	55 / 70 / 85 / 320 / 500 / 900
Non linearity (typ) %FSO	0.2	1.0
Operating temperature °C (°F)	-54 to +121 (-65 to +250)	-54 to +121(-65 to +250)
Burst pressure psi	800 / 2000 / 4000 / 4000	25 / 40 / 100 / 1000 / 2500 / 10,000
Face diameter mm (in)	3.86 (0.152)	3.86 (0.152)
Weight gram	2.3	2.3
Mounting method	10-32 UNF-2A	10-32 UNF-2A

Angular Rate Sensor	
Model number	**7310A**
Description	Angular rate 2V full scale Rugged
Linear range deg/sec	100, 500, 1500, 6000, 8000, 12,000, 18,000
Sensitivity mV/deg/sec typical	20, 4, 1.333, 0.333, 0.25, 0.167, 0.111
Excitation (Vdc)	5 to 16
Shock limit g	5000
Operating temperature °C (°F)	-40 to +105 (-40 to +221)
Dimensions mm (in)	14.6 x 10.2 x 7.62 (0.580 x 0.400 x 0.300)
Weight gram	3
Mounting method	0-80 screws

Connector & ID Chip Options



Automotive safety applications call for long cables from the measurement point to the data acquisition. Cables can get damaged and add cost and delay to test set-up. The M1 connector option allows for easy switch out of damaged cables without replacing the more costly accelerometer.



Spending a lot of valuable technician time installing connectors? Endevco can create a model to your specifications ready to install upon delivery.

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