PERFORMANCE SPECIFICATION
ACCELEROMETER
(MODEL 728-XXX-EE-ZZZ) ROHS COMPLIANT

Document Number	Rev	Date	Entered by	Description of Change	Change Accountable Engineer	ECO
73673	NR	07/24/20	LMK	Update spec	JN	50947

1.0 DESCRIPTION

The ENDEVCO® Model 728 is a family of rugged damped piezoresistive accelerometers designed for shock measurements in mobile consumer electronic devices. The highly efficient sensing system of the 728 is sculptured from a single chip of silicon. Weighing in at 0.5 grams, the extremely small size and unique construction of the element allows exceptionally high resonant frequency. On-chip balance resistors provide low zero measured output and low thermal zero drift. The lightweight Model 728 is designed to be adhesively mounted to the test article with minimal mass loading.

2.0 CERTIFIED PERFORMANCE

All specifications assume +75°F (+24°C) and 10 Vdc excitation, unless otherwise specified.

The following parameters are 100% tested. Calibration data, traceable to the National Institute of Standards and Technology (NIST), are supplied.

		Units	Range Dash Number -2K	-10K
2.1	RANGE	g	± 2000	± 10000
2.2	SENSITIVITY			
	Minimum/Typical/Maximum at 10 Vdc	µV/g	150/300/600	8.0/16.0/24.
	Minimum/Typical/Maximum	µv/V/g	15/30/60	0.8/1.6/2.4

A specification of µV/V provides a parameter specification that is independent of excitation voltage. Calculate the specification at any excitation voltage by multiplying the value by the excitation voltage. This applies to any parameter with a “unit/V” specification.

Example: 1.7 µV/V/g is the same as 1.7 x 10 = 17 µV/g at 10 Vdc excitation.

2.3	ZERO MEASURAND OUTPUT at any excitation voltage	mV	± 50 maximum
2.4	RESISTANCE		
	Input,	Ω	6500 ± 2000 / 6500 ± 2500
	Output,	Ω	6500 ± 2000 / 6500 ± 2500

		Units	Range Dash Number -2K	-10K
3.0	**TYPICAL PERFORMANCE CHARACTERISTICS**			
	The following parameters are established from testing of sample units, data is not supplied:			
3.1	NON-LINEARITY	%	1	1
3.2	THERMAL ZERO SHIFT 0°C to +70°C (+32°F to +158°F), relative to +25°C (+77°F)	Typical/Max [mV]	15/50	5/25
	For short duration tests, autozeroing prior to test is recommended to eliminate this error. For extended duration testing, it is possible to record the temperature and correct the acceleration data in post-processing.			
3.3	THERMAL SENSITIVITY SHIFT 0° to +70°C +32° to +158°F	 %/°C %/°F	 0.2 0.1	 0.2 0.1
3.4	TRANSVERSE SENSITIVITY	%	3	3
3.5	FREQUENCY RESPONSE (Referenced to 100Hz)Hz ±1 dB maximum		0 to 8000	
4.0	**ELECTRICAL**			
4.1	EXCITATION VOLTAGE MAX. EXCITATION VOLTAGE WITHOUT DAMAGE	Vdc Vdc	2 to 10 (10 standard) 12.0	
	Calibration data is supplied for sensitivity and zero measurand offset at 3.3V, 5V, and 10V excitation voltages. For maximum accuracy, calibration data for sensitivity should be taken at the same excitation voltage as is used in service, e.g. the sensitivity of the unit at 2.5 Vdc is not exactly ½ of the sensitivity at 5.0 Vdc due to self heating of the gages. Contact factory for alternate calibration options.			
4.2	ISOLATION (leads to case or shield)	MΩ	100 min. at 50 Vdc	
5.0	**PHYSICAL**			
5.1	CASE, MATERIAL	Hard anodized aluminum alloy housing, color black		
5.2	CABLE, INTEGRAL	Integral 4 conductor, # 32 AWG PVC insulated leads, shielded with black PVC jacket. Specify desired cable length at time of order [2]		
5.3	MOUNTING	Adhesive		

		Units	Range Dash Number -2K	-10K
5.4	WEIGHT (excluding cable)	grams	0.5	
6.0	**ENVIRONMENTAL**			
6.1	TEMPERATURE			
	Operating:		0°C to +70°C (+32°F to +158°F)	
	Non-operating:		-40°C to +85°C (-40°F to +185°F)	
6.2	ACCELERATION LIMITS (sensitive direction)			
	Shock		10000 g	30000 g
	Minimum haversine shock pulse duration		80 µS	80 µS
6.3	MOUNTING STRAIN SENSITIVITY		Typically less than 10 µV when tested At 250 microstrain per ISA 37.2, paragraph 6.5.	
6.4	HUMIDITY		Rated to IP67	
7.0	**CALIBRATION DATA**			
	Sensitivity			
	ZMO			
	Input and Output Resistance			
	The 728-2K is calibrated with a Pop Shock at 1000g			
	The 728-10K is calibrated with a Pop Shock at 5000g			
8.0	**ACCESSORIES**			
8.1	SUPPLIED			
	N/A			
8.2	OPTIONAL			
	136	DC Differential Voltage Amplifier		

9.0 NOTES

[1] Model Number Definition:

728 - XX – EE - ZZZ

- ZZZ: Cable length in inches (i.e.728-2K-120 has a length of 120 inches)
- EE: Excitation voltage
  - 10 – 10 V_{dc}
  - 5 – 5 V_{dc}
  - 3.3 – 3.3 V_{dc}
- XX: Indicates full-scale g range
  - 2K – 2000 g
  - 10K – 10000g
- 728: Basic Model Number