

PERFORMANCE SPECIFICATION ACCELEROMETER (MODEL 2262B-XXXX-YY)

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1.0 DESCRIPTION

The ENDEVCO® Model 2262B-XXXX Accelerometers are rugged, gas-damped transducers of the piezoresistive type. They have an integral hermetic receptacle that is designed to mate with a detachable shielded cable assembly. ENDEVCO silicon MEMS elements are used in a full bridge configuration. Typical output with 10Vdc excitation is 450 mV full scale for the -1000 range, 600 mV full scale for the -2000 range, and 96 mV full scale for the -6000 range. Model number suffix “-XXXX” is used to specify the acceleration range in $\pm$ peak g's.

2.0 CERTIFIED PERFORMANCE

All specifications assume +75°F (+24°C) and 10 Vdc excitation unless otherwise stated. The following parameters are 100% tested. Calibration data, traceable to the National Institute of Standards and Technology (NIST), are supplied.

		Units	-1000	-2000	-6000
2.1	RANGE	g	± 1000	± 2000	± 6000
2.2	SENSITIVITY				
	Minimum/Typical/Maximum at 10 Vdc	$\mu\text{V/g}$	350/450/600	150/300/450	8/16/24
	Minimum/Typical/Maximum	$\mu\text{V/V/g}$	35/45/60	15/30/45	0.8/1.6/2.4
	A specification of $\mu\text{V/V}$ 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.				
	<i>Example: 1.7 $\mu\text{V/V/g}$ is the same as $1.7 \times 10 = 17.0 \mu\text{V/g}$ at 10 Vdc excitation.</i>				
2.3	ZERO MEASURAND OUTPUT, maximum	mV	± 25	± 25	± 50
2.4	FREQUENCY RESPONSE				
	$\pm 5\%$ deviation	kHz	0 - 3	0 - 3	N/A
	± 1 dB deviation	kHz	N/A	N/A	0 - 3
2.5	RESISTANCE				
	input	Ω	6500 ± 2000	6500 ± 2000	6500 ± 2500
	output	Ω	6500 ± 2000	6500 ± 2000	6500 ± 2500
2.6	TRANSVERSE SENSITIVITY, maximum	% in any transverse axis	5	5	N/A

		<u>Units</u>	<u>-1000</u>	<u>-2000</u>	<u>-6000</u>
3.0	<u>TYPICAL PERFORMANCE CHARACTERISTICS</u>				
	The following parameters are established from testing of sample units and are not 100% tested:				
3.1	AMPLITUDE LINEARITY		±3% of reading up to full scale		
3.2	DAMPING RATIO AT +75°F (+24°C)	of critical	0.7	0.7	0.05
3.3	TRANSVERSE SENSITIVITY	% in any transverse axis	3	3	3
3.4	WARM-UP TIME		2 minutes after power on		
3.5	MOUNTED NATURAL FREQUENCY	kHz	25	25	100
3.6	THERMAL ZERO SHIFT over operating temperature range		±20mV typical at 0°F/200°F, ref. +75°F		
3.7	THERMAL SENSITIVITY SHIFT over operating temperature range	%/°C %/°F		- 0.2 - 0.1	
3.8	FREQUENCY RESPONSED Max deviation, up to 40KHZ	dB	+3	+3	+3
4.0	<u>ELECTRICAL</u>				
4.1	EXCITATION VOLTAGE	Vdc		10.0	
	MAX. EXCITATION VOLTAGE WITHOUT DAMAGE	Vdc		12.0	
	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 5.0 Vdc is not exactly ½ of the sensitivity at 10.0 Vdc due to self-heating of the gages. The excitation voltage to be used in the application should be specified at time of order. [1]				
4.2	GROUNDING	The case and cable shield are common to each other but isolated from the sensor.			
4.3	ISOLATION RESISTANCE	100 MΩ min at 100 VDC, all leads to case.			

		<u>Units</u>	<u>-1000</u>	<u>-2000</u>	<u>-6000</u>
5.0	<u>PHYSICAL</u>				
5.1	MATING CABLE	ENDEVCO Model 3915			
5.2	CASE, MATERIAL	304L CRES			
5.3	WEIGHT	22 grams typical			
5.4	IDENTIFICATION	Manufacturer's Logo, Model Number, Range, and Serial Number			
5.5	MOUNTING	Provision for 10-32 UNF x 1/8" stud, recommended mounting torque 18 lbf-in (2 N-m)			
6.0	<u>ENVIRONMENTAL</u>				
6.1	ACCELERATION, maximum any direction Shock, half-sine pulse	g	10000	10000	20000
6.2	TEMPERATURE				
	Operating	-67°F to +257°F (-55°C to +125°C)			
	Storage	-67°F to +257°F (-55°C to +125°C)			
6.3	HUMIDITY	Hermetically sealed			
6.4	ALTITUDE	Unaffected			
6.5	BASE STRAIN SENSITIVITY at 250 µstrain	g, equiv.	0.05	0.05	0.5
7.0	<u>CALIBRATION DATA</u>				
	Data for frequency response (20Hz to 5000Hz), sensitivity, ZMO, input resistance and output resistance are supplied on the Calibration Certificate. Calibration will be performed at the excitation voltage provided by the customer at the time of order (see Paragraph 9.0 for ordering information).				
8.0	<u>ACCESSORIES</u>				
8.1	SUPPLIED				
	ENDEVCO Model 2981-12	Mounting Stud, 10-32, Hex I.D.			
8.2	OPTIONAL				
	ENDEVCO Model 3915/-XXX	Cable Assembly			
	ENDEVCO Model 2981-3	Adapter Stud, 10-32			
	ENDEVCO Model 2981-4	Adapter Stud, M5 x 0.8			

9.0

NOTES

[1] Model Number Definition:

