

PERFORMANCE SPECIFICATION ACCELEROMETER (Model 7310A-XXX-ZZZ)

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77898	NR	5/15/23	NAD	Initial Release of Model 7310A-XXX-ZZZ Performance Specification	нх	53836

1.0 DESCRIPTION

The ENDEVCO® Model 7310A is an angular rate sensor that utilizes unique silicon MEMS gyroscope technologies with custom electronics and packaging and provides reliable sensing performance even under excessive shock and vibration environments. This angular rate sensor is designed specifically for automotive safety testing and other system designs requiring accurate measurement of angular velocity. The 7310A angular rate sensor features various full angular rate ranges including ± 100 , ± 500 , ± 1500 , ± 6000 , ± 8000 ± 12000 and ± 18000 deg/sec, and provides full scale voltage output of ± 2 Vpk. The Model 7310A can also be mounted inverted to allow measurement of opposite angular sensitivity direction.

2.0 ELECTRICAL CHARACTERISTICS

All specifications assume +75°F (+24°C) and +7 Vdc excitation unless otherwise stated. The following parameters are 100% tested.

		Units		Range Dash Number					
	DASH No.		<u>-100</u>	<u>-500</u>	<u>-1K5</u>	<u>-6K</u>	<u>-8K</u>	<u>-12K</u>	<u>-18K</u>
	RANGE	deg/sec	±100	±500	±1500	±6000	±8000	±12000	±18000
2.1	SENSITIVITY(±15%)	mV/deg/sec	20	4	1.333	0.333	0.25	0.167	0.111
2.2	ZERO MEASURAND OUTPUT	mV	±100	±100	±100	±100	±100	±100	±100
2.3	NON-LINEARITY (Maximum)	%FSO	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5

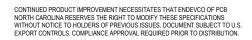
3.0 TYPICAL PERFORMANCE

The following parameters are established from testing of sample units.

3.1	FREQUENCY RESPONSE (+1dB/-3dB, ref 100 Hz)	Hz	0-1000	0-1000	0-1000	0-1000	0-1000	0-2000	0-2000
3.2	CROSS AXIS SENSITIVITY	%	<1	<1	<1	<1	<1	<1	<1
3.3	THERMAL ZERO SHIFT (MAX) -40°C to +105°C, ref. 24°C (-40°F to 221°F, ref. 75°F)	%FSO	±2.5	±2.5	±2.5	±2.5	±2.5	±2.5	±2.5



		Units	Range Dash Number									
			<u>-100</u>	<u>-500</u>	<u>-1K5</u>	<u>-6K</u>	<u>-8K</u>	<u>-12K</u>	<u>-18K</u>			
3.4	THERMAL SENS SHIFT (MAX) -40°C to +105°C, ref. 24°C (-40°Fto +221°F, ref. 75°F)	%	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0			
3.5	RESIDUE NOISE (PASSBAND, TYPICAL)	mV RMS	12	3.2	2.5	2.1	2.1	1.8	1.8			
4.0	ELECTRICAL											
4.1	EXCITATION VOLTAGE				5 to 16 \	5 to 16 Vdc						
4.2	CURRENT DRAIN				6 mA ma	6 mA max						
4.3	OUTPUT IMPEDANCE				200 ohn	ns max						
4.4	MAXIMUM EXCITATION VOLTAGE WITHOUT DAMA	GE			20 Vdc	20 Vdc						
4.5	COMMON MODE VOLTAGE	(±5%)			2.5 Vdc							
4.6	FULL SCALE OUTPUT VOL	TAGE (±15%)			±2 Vpk							
4.7	INSULATION RESISTANCE >100 M Ω (@100Vdc)											
4.8	WARM-UP TIME (to within 1% of final output value)					<100 ms						
4.9	INFLUENCE OF LINEAR ACCELERATION					0.1 deg/sec/g typical						
5.0	PHYSICAL PHYSICAL											
5.1	WEIGHT (typical)				3 grams	3 grams (without cable)						
5.2	CASE MATERIAL	CASE MATERIAL					Anodized aluminum alloy.					
5.2.1	CABLE TYPE				Integral 4 conductor, # 32 AWG PFA insulated leads, Shielded with silicone jacket.							
5.3	MOUNTING/TORQUE 4 lb-in (0.45 N-m)					Screw Mount, #0-80, 2X						
6.0	ENVIRONMENTAL											
6.1	ACCELERATION LIMITS (in any direction)											
6.1.1	1 Shock Limit 5					5000g						
6.2	TEMPERATURE											





6.2.1 Operating Range

-40°F to +221°F (-40°C to +105°C)

6.2.2 Storage Range

40°F to +221°F (-40°C to +105°C)

6.3 Humidity

IP67

7.0 CALIBRATION DATA

7.1 SENSITIVITY

(Measured with +7 Vdc excitation)

Measured at 100 deg/s for -100, 500deg/s for -500, 1500 deg/s for -1K5, and 3000 deg/s for -6K, -8K, -12K and –

18K.

7.2 ZERO MEASURAND OUTPUT

NON-LINEARITY

(Measured with +7 Vdc excitation)

Measured at +7 Vdc excitation and room temperature

Measured within range -100 \sim +100 deg/s for -100, -500 \sim +500 deg/s for -500, -1500 \sim +1500 deg/s for -1K5, and -3000 \sim +3000 deg/s for -6K, -8K, -12K and -18K.

8.0 ACCESSORIES

7.2.1

EH863 EHW196

EHM2156 7930 #0-80 (3/8 length) Socket Head Cap Screw, 2X

Washer Hex Wrench

Triaxial mounting Block (Optional)

9.0 NOTES

[1] Model Number Definition:

