ENDEVCO
AN AMPHENOL COMPANY

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

Document Number	Rev	Date	Entered by	Description of Change	Change Accountable Engineer	ECO
77898	NR	5/15/23	NAD	Initial Release of Model 7310A-XXX-ZZZ Performance Specification	HX	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 ±2Vpk. 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.		-100	-500	-1K5	-6K	-8K	-12K	-18K
	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**						
			-100	-500	-1K5	-6K	-8K	-12K	-18K
3.4	THERMAL SENS SHIFT (MAX) -40°C to +105°C, ref. 24°C (-40°F to +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 Vdc
4.2	CURRENT DRAIN	6 mA max
4.3	OUTPUT IMPEDANCE	200 ohms max
4.4	MAXIMUM EXCITATION VOLTAGE WITHOUT DAMAGE	20 Vdc
4.5	COMMON MODE VOLTAGE (±5%)	2.5 Vdc
4.6	FULL SCALE OUTPUT VOLTAGE (±15%)	±2 Vpk
4.7	INSULATION RESISTANCE >100 MΩ (@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

5.1	WEIGHT (typical)	3 grams (without cable)
5.2	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	Shock Limit	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 at 100 deg/s for -100, 500deg/s for -500, 1500
        (Measured with +7 Vdc excitation)   deg/s for -1K5, and 3000 deg/s for -6K, -8K, -12K and –
                                                                 18K.

7.2   ZERO MEASURAND OUTPUT   Measured at +7 Vdc excitation and room temperature

7.2.1   NON-LINEARITY   Measured within range -100 ~ +100 deg/s for -100, -500
        (Measured with +7 Vdc excitation)   ~ +500 deg/s for -500, -1500 ~ +1500 deg/s for -1K5,
                                                                 and -3000 ~ +3000 deg/s for -6K, -8K, -12K and -18K.

8.0   ACCESSORIES

EH863   #0-80 (3/8 length) Socket Head Cap Screw, 2X
EHW196   Washer
EHM2156   Hex Wrench
7930   Triaxial mounting Block (Optional)

9.0   NOTES

[1] Model Number Definition:

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7310A  -  XXX  -  ZZZ
  |        |       |
  |        |       |
  |        |       |
  |        |       |_____  Cable length in inches
  |        |                   (if no dash number is specified the default is 300 inches)
  |        |
  |        |_____  Angular rate range
  |                            -100 is ±100deg/sec, -500 is ±500deg/sec, -1K5 is ±1500deg/sec,
  |                            -6K is ±6000deg/sec, -8K is ±8000deg/sec, -12K is ±12000deg/sec,
  |                            -18K is ±18000deg/sec
  |
  |_____   Basic Model Number
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