

PERFORMANCE SPECIFICATION ACCELEROMETER (MODEL 771-XXX-Y) **RoHS COMPLIANT**

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76768	NR	8/10/22	NAD	Initial Release of Model 771-XXX-Y Performance Specification	НХ	53026

1.0 **DESCRIPTION**

The ENDEVCO® Model 771 is a low g DC Accelerometer that utilizes unique variable capacitance microsensors. This Accelerometer is designed for measurement of relatively low level accelerations in automotive ride quality, motorsports and high speed rail applications where measurement of whole body motion immediately after the Accelerometer is subjected to a shock motion and in the presence of severe vibrational inputs is required.

The 771 Accelerometer is available with a choice of two power options. One option (U) allows for operation from 7V to 36V. The second option (R) allows for operation at a regulated excitation voltage of 5V. The Accelerometer features various full scale g ranges including ±2g, ±10g, ±30g, ±50g, ±100g, ±200g, and provides single-ended output with a 2.5V output bias voltage.

2.0 **ELECTRICAL CHARACTERISTICS**

Units

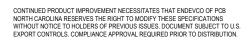
All specifications assume +75°F (+24°C), +5 Vdc excitation (for 771-XXX-R) or +15Vdc excitation (for 771-XXX-U) unless otherwise stated. The following parameters are 100% tested.

Range Dash Number

	RANGE	g	<u>-2</u>	<u>-10</u>	-30	<u>-50</u>	<u>-100</u>	<u>-200</u>
2.1	SENSITIVITY	mV/g	1000 ±50	200 ±10	66 ±4	40 ±2	20 ±1.0	10 ±1.0
2.2	FREQUENCY RESPONSE (±5% max, ref 100 Hz) (±10% typical, ref 100 H (±3dB typical, ref 100 H		0-200 0-350 0-650	0-900 0-1600 0-2500	0-900 0-2200 0-3000	0-900 0-2200 0-3000	0-1500 0-3800 0-5000	0-1500 0-3800 0-5000
2.3	ZERO MEASURAND OUTPUT	mV	2500 ±50	2500 ±50	2500 ±50	2500 ±50	2500 ±50	2500 ±50
3.0	TYPICAL PERFORMANCE							
	The following parameters are established from testing of sample units.							
3.1	TRANSVERSE SENSITIVITY (Typical)	%	3.0	3.0	3.0	3.0	3.0	3.0
3.2	THERMAL ZERO SHIFT (MAX) -55°C to +125°C, ref. 2: (-67°F to 257°F, ref. 77		±2.0	±2.0	±2.0	±2.0	±2.0	±2.0



		Units	<u>-2</u>	<u>-10</u>	Range D	ash Numb -50	er <u>-100</u>	<u>-200</u>		
3.3	THERMAL SENS SHIFT (MAX) -55°C to +125°C, ref. 2 (-67°F to +257°F, ref. 7		±2.0	±2.0	±2.0	±2.0	±2.0	±2.0		
3.4	COMBINED NON-LINE (BFSL) AND HYSTERE (Maximum)		±0.5	±0.5	±0.5	±0.5	±0.5	±0.5		
3.5	NATURAL FREQUENCY, TYP	Hz	1300	2700	5500	5500	9800	9800		
3.6	THRESHOLD (RESOLUTION)	equiv. g's.	.0002	.001	.003	.005	.01	.02		
3.7	WARM-UP TIME (to wi	WARM-UP TIME (to within 1% of final output value)					30 ms			
4.0	ELECTRICAL									
4.1	EXCITATION VOLTAGE For option "R" supply voltage For option "U" supply voltage					5 Vdc 7 to 36 Vdc				
4.2	CURRENT DRAIN					8 mA max				
4.3	OUTPUT IMPEDANCE					100 ohms max				
4.4	LOAD					10K ohms resistance minimum 50 pF capacitance maximum				
4.5	RESIDUAL NOISE					$50~\mu V rms$ typ, $100~u V rms$ max; 0.5 to $100~Hz$ $500~\mu V rms$ typ, $1.0~m V rms$ max; $0.5 Hz$ to $10~k Hz$				
4.6	MAXIMUM EXCITATION VOLTAGE WITHOUT DAMAGE For option "R" supply voltage For option "U" supply voltage					7 Vdc 45 Vdc				
4.7	INPUT VOLTAGE PROTECTION				REVERSE POLARITY PROTECTED (For "U" option only)					
4.8	INSULATION RESISTANCE Case to leads shorted together Shield to leads shorted together			1	100 Meg Ohms minimum at 50 Vdc					
5.0	PHYSICAL PHYSICAL									
5.1	WEIGHT (typical)			2	29 grams					





5.2	CASE MATERIAL	Stainless steel (304L CRES)
5.2.1	ELECTRICAL CONNECTION	Endevco cable model 3027A (optional)
5.3	MOUNTING/TORQUE	Hole for 10-32 UNF x 1/8 inch mounting stud/18 lbf-in (2Nm)
6.0	ENVIRONMENTAL	
6.1	ACCELERATION LIMITS (in any direction)	
6.1.1	Vibration	20 g rms random 20-2000 Hz
6.1.2	Shock	10000g (0.15 mS haversine pulse)
6.2	TEMPERATURE	
6.2.1	Operating Range	-67°F to +257°F (-55°C to +125°C)
6.2.2	Storage Range	-40°F to +212°F (-40°C to +100°C)
6.3	HUMIDITY	Unit is hermetically sealed
7.0	CALIBRATION DATA	
7.1	SENSITIVITY	Measured at 1g and 100 Hz for the -2 Measured at 10g and 100Hz for the -10, -30 -50, -100 and -200
7.2	FREQUENCY RESPONSE	Measured at 1g, 20 to 1000 Hz for the -2 Measured at 10 g, 20 to 10000 Hz for the -10 -30, -50,-100 and -200
7.3	ZERO MEASURAND OUTPUT	Measured at room temperature
8.0	ACCESSORIES	
	2981-12 Mounting Stud (10-32 UNF-2A)	

Endevco 3027A-XX Mating Cable Assembly (XX identifies cable length in inches) (Optional) 2981-3 Mounting Stud (Optional) 2981-4 Mounting Stud (M5-0.8) (Optional)



9.0 **NOTES**

- [1] Full scale output (FSO) is nominally 4 volts
- [2] THRESHOLD = 2X MÁX. RESIDUÁL NOISE; .5 TO 100HZ/SENSITIVITY
- [3] Model Number Definition:

