

PERFORMANCE SPECIFICATION
 ACCELEROMETER
 773A-XXX-Y-ZZZ
 RoHS COMPLIANT

Document Number	Rev	Date	Entered by	Description of Change	Change Accountable Engineer	ECO
78781	NR	12/15/25	NAD	Initial Release of Performance Specification of 773A Models	HX	55567

1.0 DESCRIPTION

The ENDEVCO® Model 773A is a Tri-axial 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. 773A meet the requirements for IP67.

The 773A 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 $\pm 8g$, $\pm 15g$, $\pm 50g$, $\pm 100g$, $\pm 200g$ and provides single-ended output with a 2.5V output bias voltage and differential output with a 0V output bias voltage.

2.0 ELECTRICAL CHARACTERISTICS

All specifications assume $+75^{\circ}\text{F}$ ($+24^{\circ}\text{C}$), +5 Vdc excitation (for 773A-XXX-R-ZZZ) or +15 Vdc excitation (for 773A-XXX-U-ZZZ) unless otherwise stated. The following parameters are 100% tested.

		<u>Units</u>	<u>Range Dash Number</u>				
	RANGE	g	-8	-15	-50	-100	-200
2.1	SENSITIVITY	mV/g	250 ± 10	133 ± 5	40 ± 2	20 ± 1.0	10 ± 1.0
2.2	FREQUENCY RESPONSE ($\pm 5\%$, ref 100 Hz) max	Hz	0-450	0-550	0-750	0-1200	0-1200
	FREQUENCY RESPONSE ($\pm 1\text{dB}$, ref 100 Hz) typical	Hz	0-1000	0-1500	0-1800	0-2000	0-2000
	REQUENCY RESPONSE ($\pm 3\text{dB}$, ref 100 Hz) typical	Hz	0-1200	0-2500	0-3000	0-5000	0-5000
2.3	ZERO MEASURAND OUTPUT Single-Ended Differential	mV	2500 ± 75 ± 75	2500 ± 75 ± 75	2500 ± 75 ± 75	2500 ± 75 ± 75	2500 ± 75 ± 75
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

				<u>Units</u>				
				<u>Range Dash Number</u>				
				<u>-8</u>	<u>- 15</u>	<u>-50</u>	<u>-100</u>	<u>-200</u>
3.2	THERMAL ZERO SHIFT (MAX) -40°C to +100°C, ref. 24°C (-40°F to +212°F, ref. 75°F)	%FSO [1]		±2.0	±2.0	±2.0	±2.0	±2.0
3.3	THERMAL SENS SHIFT (MAX) -40°C to +100°C, ref. 24°C (-40°F to +212°F, ref. 75°F)	%		±2.0	±2.0	±2.0	±2.0	±2.0
3.4	COMBINED NON-LINEARITY (BFSL) AND HYSTERESIS (Typical)	%FSO		±0.5	±0.5	±0.5	±0.5	±0.5
3.5	NATURAL FREQUENCY, TYP	Hz	X Y Z	4800 4800 3500	4800 4800 3500	8000 8000 6000	14000 14000 10500	14000 14000 10500
3.6	THRESHOLD (RESOLUTION) [2]	equiv. g's.		0.0016	0.003	0.01	0.02	0.04
3.7	WARM-UP TIME (to within 1% of final output value)					30 ms		
4.0	<u>ELECTRICAL</u>							
4.1	EXCITATION VOLTAGE For option "R" supply voltage For option "U" supply voltage					5 Vdc 7 to 36 Vdc		
4.2	CURRENT DRAIN					14 mA max		
4.3	OUTPUT IMPEDANCE					100 ohms max		
4.4	LOAD					10K ohms resistance minimum 50 pF capacitance maximum		
4.5	RESIDUAL NOISE					100 µVrms typ, 200 µVrms max; 0.5 to 100 Hz 500 µVrms typ, 1.0 mVrms max; 0.5Hz to 10 kHz		
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					100 Meg Ohms minimum at 50 Vdc		

5.0 **PHYSICAL**

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| 5.1 | WEIGHT (typical) | 22 grams (without cable) plus cable at 20 grams/meter |
| 5.2 | CASE MATERIAL | Anodized aluminum alloy. |
| 5.2.1 | CABLE TYPE | Integral Cable, 8 conductor (6 used) 28 AWG , PFA insulated leads, SPC shield, black PFA jacket, OD 0.128" Max. |
| 5.3 | MOUNTING/TORQUE | 4 lb-in (0.45 N-m) |

6.0 **ENVIRONMENTAL**

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| 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 | -40°F to +257°F (-40°C to +125°C)
(-55°C is optional, see note [3]) |
| 6.2.2 | Storage Range | -40°F to +257°F (-40°C to +125°C) |
| 6.3 | Humidity | IP67 |

7.0 **CALIBRATION DATA**

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| 7.1 | SENSITIVITY | Measured at 1g and 100 Hz for the -8
Measured at 10 g and 100Hz for the -15
-50, -100 and -200 |
| 7.2 | FREQUENCY RESPONSE | Measured at 1g, 20 to 1000 Hz for the -8
Measured at 10 g, 20 to 5000 Hz for the -15
, -50,-100 and -200 |
| 7.3 | ZERO MEASURAND OUTPUT | Measured at room temperature |

8.0 **ACCESSORIES**

2X #2-56 (1/2" length) Socket Head Cap Screw (EDVEH597)
 2X Washer (EDVEHW200)
 1X Hex Wrench (EDVEHM178)

9.0 **NOTES**

[1] Full scale output (FSO) is nominally 4 volts

[2] THRESHOLD = [2X MAX. RESIDUAL NOISE; .5 TO 100Hz] Divide SENSITIVITY

[3] Sensor can function for limited excursions to -55°C, but is not rated for continuous operation at that temperature.

[4] Model Number Definition:

