i-TEDS Accelerometer

Model 63C12 and 63C13

- Triaxial, Smart ISOTRON
- Designed for Modal Analysis
- Outstanding Phase and Amplitude Response
- Light Weight, Single Cable, Rugged, Low Cost



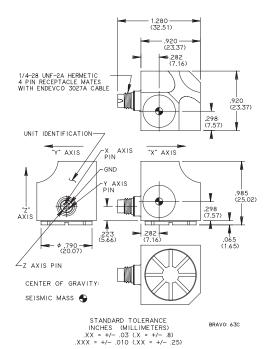
ENDEVCO MODEL 63C12/C13

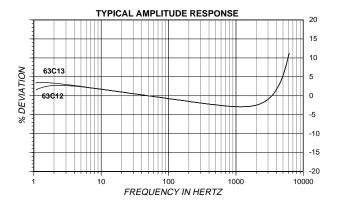


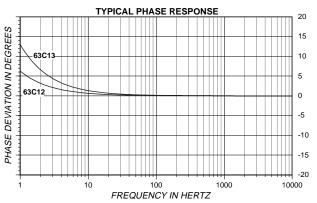
DESCRIPTION

The ENDEVCO® Model 63C is a compact triaxial piezoelectric accelerometer with integral electronics, which features Smart ISOTRON capabilities. This accelerometer offers exemplary dynamic range and frequency response, and maintains good phase characteristics over its entire operating temperature. Model 63C is designed for low frequency, low g modal analysis applications. The Model 63CXX features ENDEVCO's PIEZITE® Type P-8 crystal element, which offers the highest transduction efficiency without sacrificing ruggedness. This accelerometer features low unit-to-unit phase deviation at low frequencies, ideal for modal studies of large rigid bodies. The Smart ISOTRON features enables a dedicated signal conditioner to communicate digitally with the accelerometers TEDS (Transducer Electronic Data Sheet) compliant to the proposed IEEE 1451.4 standard. Its low impedance voltage outputs are connected to the same 4-wire cable that supplies the required constant current power. Signal ground is isolated from the mounting surface.

ENDEVCO Signal Conditioner Models 133, 2792B or 2793 are recommended for use with this accelerometer.













ENDEVCO MODEL 63C12/C13

i-TEDS Accelerometer

SPECIFICATIONS (EACH AXIS)

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C), 4 mA, and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

RANGE 9	DYNAMIC CHARACTERISTICS	Units	63C12	63C13
FOLTAGE SENSITIVITY, Typical mV/g 100 1000 FREGUENCY RESPONSE See Typical Curves Amplitude Response ±5% Hz .5 to 2000 ±16B Hz .03 to 4000 Resonance Frequency Hz .30 000 READINITY % ≤ 5 TEMPERATURE RESPONSE See Typical Curve AMPLITUDE NONLINEARITY [1] % ≤ 1 OUTPUT CHARACTERISTICS OUTPUT POLLARITY Positive output when acceleration is in direction of sensative axis DC OUTPUT IBAS VOLTAGE Vdc +12 ±1 OUTPUT IMPEDANCE Ω < 120				
REGULENCY RESPONSE See Typical Curves	VOLTAGE SENSITIVITY. Typical		100	1000
Amplitude Response ±5% Hz .5 to 2000 ±15% Hz .0.3 to 4000 Resonance Frequency Hz 30 000 TRANSVERSE SENSITIVITY % ≤ 5 TEMPERATURE RESPONSE See Typical Curve AMPLITUDE NONLINEARITY [1] % ≤ 1 OUTPUT CHARACTERISTICS OUTPUT POLARITY Positive output when acceleration is in direction of sensative axis DC OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT BIAS VOLTAGE Q < 120		<u> </u>		
±5% ±1dB Hz .5 to 2000 ±1d 0.000 mode. Resonance Frequency Hz 0.3 to 4000 mode. TRANSVERSE SENSITIVITY % ≤ 5 TEMPERATURE RESPONSE See Typical Curve AMPLITUDE NONLINEARITY [1] % ≤ 1 OUTPUT OLARIACTERISTICS OUTPUT POLARITY Positive output when acceleration is in direction of sensative axis DC OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT IMPEDANCE Ω <120	Amplitude Response		7 1	
Resonance Frequency Hz 30 000 TRANSVERSE SENSITIVITYY % ≤ 5 TEMPERATURE RESPONSE See Typical Curve AMPLITUDE NONLINEARITY [1] % ≤ 1 OUTPUT CHARACTERISTICS OUTPUT DELARITY Positive output when acceleration is in direction of sensative axis DC OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT DELARITY Positive output when acceleration is in direction of sensative axis DC OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT DELARITY OUTAGE Ω <120	· · · · · · · · · · · · · · · · · · ·	Hz	.5 to 200	00
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TRANSVERSE SENSITIVITY % ≤ 5 TEMPERATURE RESPONSE See Typical Curve AMPLITUDE NONLINEARITY [1] % ≤ 1 OUTPUT CHARACTERISTICS OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT IMPEDANCE Ω < 120	Resonance Frequency	Hz	30 000	
AMPLITUDE NONLINEARITY [1] % ≤ 1 OUTPUT CHARACTERISTICS OUTPUT POLARITY Positive output when acceleration is in direction of sensative axis DC OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT IMPEDANCE Ω <120 FULL SCALE OUTPUT VOLTAGE ±5 RESIDUAL NOISE eq. g rms 0.00013 0.00006 0.5 Hz to 10 kHz bandwidth GROUNDING Signal ground is connected to the case, case is isolated from the mounting surface POWER REQUIREMENT COMPLIANCE VOLTAGE Vdc +20 to +30 SUPPLY CURRENT mA +2 to +10 WARM-UP TIME (to reach 90% of final bias) sec <20 <5 ENVIRONMENTAL CHARACTERISTICS TEMPERATURE RANGE -66°F to +257°F (-55°C to +125°C) HUMDIDTY Hemectically sealed SINUSCIDAL VIBRATION LIMIT g pk SASS STRAIN SENSITIVITY eq. g/ps 5000 SHOCK LIMIT g pk SOUDO SHOCK LIMIT g pk THERMAL TRANSIENT SENSITIVITY eq. g/ps (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 THERMAL TRANSIENT SENSITIVITY eq. g -9 (-9. g/ps train 0.0001 T		%	≤5	
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OUTPUT POLARITY Positive output when acceleration is in direction of sensative axis DC OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT IMPEDANCE Ω <120	AMPLITUDE NONLINEARITY [1]	%	≤1	
DC OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT IMPEDANCE Ω <120	OUTPUT CHARACTERISTICS			
DC OUTPUT BIAS VOLTAGE Vdc +12 ±1 OUTPUT IMPEDANCE Ω <120	OUTPUT POLARITY		Positive output when acceleration is in	direction of sensative axis
FULL SCALE OUTPUT VOLTAGE eq. g rms	DC OUTPUT BIAS VOLTAGE			
RESIDUAL NOISE 0.5 Hz to 10 kHz bandwidth eq. g rms 0.00013 0.00006 0.5 Hz to 10 kHz bandwidth GROUNDING Signal ground is connected to the case, case is isolated from the mounting surface POWER REQUIREMENT COMPLIANCE VOLTAGE Vdc +20 to +30 SUPPLY CURRENT mA +2 to +10 WARM-UP TIME (to reach 90% of final bias) sec < 20	OUTPUT IMPEDANCE	Ω	<120	
0.5 Hz to 10 kHz bandwidth GROUNDING Signal ground is connected to the case, case is isolated from the mounting surface POWER REQUIREMENT COMPLIANCE VOLTAGE Vdc +20 to +30 SUPPLY CURRENT MA +2 to +10 WARM-UP TIME (to reach 90% of final bias) sec <20 <5 ENVIRONMENTAL CHARACTERISTICS TEMPERATURE RANGE HUMIDITY Hermectically sealed SINUSOIDAL VIBRATION LIMIT g pk 5000 SHOCK LIMIT g pk 5000 BASE STRAIN SENSITIVITY eq. g/µstrain THERMAL TRANSIENT SENSITIVITY eq. g/µstrain THERMAL TRANSIENT SENSITIVITY eq. g/PF (/*C) .003 (0.006) .025 (0.045) PHYSICAL CHARACTERISTICS DIMENSIONS See Outline Drawing WEIGHT gm (oz) 44 (1.75) CASE MATERIAL Titanium CONNECTOR MOUNTING Adhesive CALIBRATION SUPPLIED: VOLTAGE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY %	FULL SCALE OUTPUT VOLTAGE		±5	
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POWER REQUIREMENT COMPLIANCE VOLTAGE Vdc ±20 to ±30 SUPPLY CURRENT mA ±2 to ±10 WARM-UP TIME (to reach 90% of final bias) sec < 20	0.5 Hz to 10 kHz bandwidth	. 0		
COMPLIANCE VOLTAGE Vdc ±20 to ±30 SUPPLY CURRENT mA ±2 to ±10 WARM-UP TIME (to reach 90% of final bias) sec < 20	GROUNDING	Signal ground is o	connected to the case, case is isolated	from the mounting surface
COMPLIANCE VOLTAGE Vdc ±20 to ±30 SUPPLY CURRENT mA ±2 to ±10 WARM-UP TIME (to reach 90% of final bias) sec < 20	POWER REQUIREMENT			
SUPPLY CURRENT		Vdc	+20 to +30	
WARM-UP TIME (to reach 90% of final bias) sec < 20 < 5 ENVIRONMENTAL CHARACTERISTICS TEMPERATURE RANGE TEMPERATURE RANGE HUMIDITY Hermectically sealed SINUSOIDAL VIBRATION LIMIT g pk 5000 BASE STRAIN SENSITIVITY At 250 µstrain THERMAL TRANSIENT SENSITIVITY PHYSICAL CHARACTERISTICS DIMENSIONS See Outline Drawing WEIGHT GONNECTOR Microtech DR-4S-4H receptacle mates with Endevco Model 3027A Series Cable MOUNTING CALIBRATION SUPPLIED: VOLTAGE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY MOUNTING Sec < 20 < 5				
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TEMPERATURE RANGE HUMIDITY Hermectically sealed SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT BASE STRAIN SENSITIVITY Eq. g/µstrain THERMAL TRANSIENT SENSITIVITY Eq. g /°F (/°C) DIMENSIONS See Outline Drawing WEIGHT CASE MATERIAL CONNECTOR MOUNTING CALIBRATION SUPPLIED: VOLTAGE SENSITIVITY MAXIMUM TRANSVERSE SENSITIVITY Req. 67°F to +257°F (-55°C to +125°C) Hermectically sealed ### Hermectically sealed ### ### ### ### ### #### ############	ENIVIDONIMENTAL CHADACTERISTICS			
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PHYSICAL CHARACTERISTICS DIMENSIONS See Outline Drawing WEIGHT gm (oz) 44 (1.75) CASE MATERIAL Titanium CONNECTOR MOUNTING Microtech DR-4S-4H receptacle mates with Endevco Model 3027A Series Cable MOUNTING CALIBRATION SUPPLIED: VOLTAGE SENSITIVITY MAXIMUM TRANSVERSE SENSITIVITY MAXIMUM TRANSVERSE SENSITIVITY MOUNTING MV/g		ea_a_/°F (/°C)	003 (0.006)	025 (0.045)
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CASE MATERIAL CONNECTOR Microtech DR-4S-4H receptacle mates with Endevco Model 3027A Series Cable MOUNTING CALIBRATION SUPPLIED: VOLTAGE SENSITIVITY MAXIMUM TRANSVERSE SENSITIVITY M6				
CONNECTOR Microtech DR-4S-4H receptacle mates with Endevco Model 3027A Series Cable MOUNTING CALIBRATION SUPPLIED: VOLTAGE SENSITIVITY MAXIMUM TRANSVERSE SENSITIVITY %	11 = 1 = 1 1	gm (oz)	,	
MOUNTING Adhesive CALIBRATION SUPPLIED: VOLTAGE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY %				
CALIBRATION SUPPLIED: VOLTAGE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY %				
SUPPLIED: VOLTAGE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY %	MOUNTING	Adhesive		
VOLTAGE SENSITIVITY mV/g MAXIMUM TRANSVERSE SENSITIVITY %	CALIBRATION			
MAXIMUM TRANSVERSE SENSITIVITY %	SUPPLIED:			
	VOLTAGE SENSITIVITY	mV/g		
FREQUENCY RESPONSE % 20 Hz to 5 kHz	MAXIMUM TRANSVERSE SENSITIVITY			
	FREQUENCY RESPONSE	%	20 Hz to 5 kHz	

ACCESSORIES

Model 3027AM3-120 (10 ft) TRIAXIAL CABLE ASSEMBLY, 3 BNC's

OPTIONAL ACCESSORIES

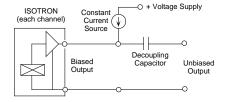
Model 3027A-120 P/N 32227

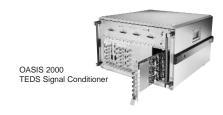
Model 3027AM4-120 (10 ft) TRANSDUCER EXTENSION CABLE, BETWEEN TRANSDUCER AND 3027AM3 TRIXIAL CABLE ASSEMBLY, PIGTAILS

PETRO WAX

NOTES

- Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Send for TP290 for more details.
- Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.





Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the