T-Junction Calibrator

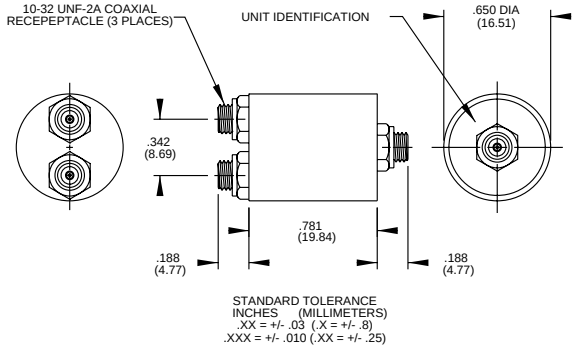
ENDEVCO MODEL 2944.1

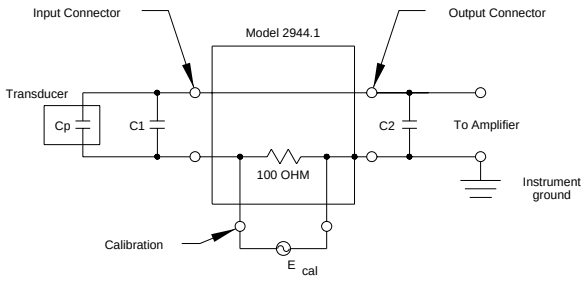
Model 2944.1

- **Permits Passive Calibration of Measurement Systems for Piezoelectric Transducers**
- **Small, Light Weight**
- **10-32 Receptacles for Convenient Connection of Coaxial Cables**
- **Aids Compliance with MIL-STD-740-2**



Not actual size





DESCRIPTION

The ENDEVCO® Model 2944.1 T-Junction Calibrator provides all the necessary circuitry and connections for passive voltage insertion calibration of measurement systems used with piezoelectric transducers. The voltage insertion calibration method is a simulation technique that introduces a voltage into the ground side of the transducer output signal cable between the transducer and its instrumentation amplifier to simulate the self-generating output of the transducer. This simulation is often performed immediately before and after a test event as an *in-situ* calibration of the signal conditioning and readout instrumentation. Such a calibration is required by the MIL-STD-740-2. The simulation can be performed over a wide range of amplitudes and frequencies.

The Model 2944.1 is a three-terminal network enclosed in a shielded case. Included in the network is a precision 100 ohm resistor to close the ground circuit so that measurements can be made without having to remove the Model 2944.1 from the system. Receptacles are provided for attachment of cables from the transducer, signal conditioner, and external calibration voltage source.

The voltage insertion method is effective only with isolated transducers. An isolated mounting stud can be used to provide the necessary isolation for grounded transducers. The case of the Model 2944.1 is at amplifier signal ground and must be isolated from other grounds by at least 10 MΩ to prevent ground loops. An isolated cable clamp is provided for this purpose.

Voltage insertion calibration is a passive operation and as such does not provide a dynamic sensitivity calibration of the transducer. For applications requiring a dynamic vibration calibration, the ENDEVCO Model 28959 Portable Shaker System should be used.

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T-Junction Calibrator

SPECIFICATIONS

INPUTS	
TRANSDUCER	Single-ended, isolated from case ground.
CALIBRATOR VOLTAGE	Single-ended with shield connected to amplifier signal ground.
OUTPUTS	
AMPLIFIER	Single-ended with shield connected to case ground. This is the simulated accelerometer output which goes to the system amplifier.
ELECTRICAL	
CALIBRATION RESISTANCE	100Ω ±1% at 75°F (24°C)
CALIBRATION CURRENT	50 mA rms maximum
INSULATION RESISTANCE	10 MΩ minimum at 50 VDC, between signal lead and case
GROUND ISOLATION	The calibrator must be isolated from ground by 10 MΩ minimum.
CAPACITANCE	10 pF typical, between signal lead and case
ENVIRONMENTAL	
TEMPERATURE	-65°F to 250°F (-54°C to 121°C)
VIBRATION	1000 g pk
SHOCK	10 000 g pk
PHYSICAL	
DIMENSIONS	0.65" d x 1.15" l (16.5mm x 29.2mm)
WEIGHT	1.1 oz (31 gm)
CASE MATERIAL	Brass, nickel plated
CONNECTORS	Coaxial 10-32 receptacles

ACCESSORY

EHF76 5/8" PLASTIC CLAMP

OPTIONAL ACCESSORY

3090C-120 LOW NOISE COAXIAL CABLE

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 name Endevco synonymous with reliability.

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