

PIEZOELECTRIC Force Sensor

**ENDEVCO
MODEL
2313**

Model 2313

- Charge Mode, no External Power Required
- Rigid Quartz Elements
- Wide Compression Range
- Heavy Duty

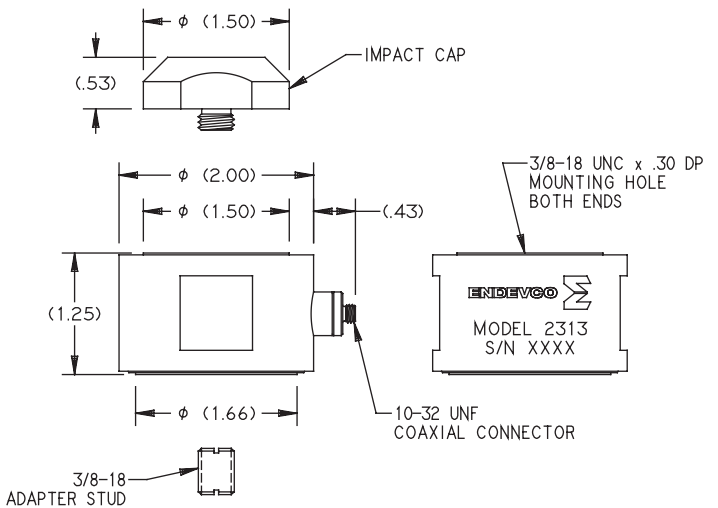


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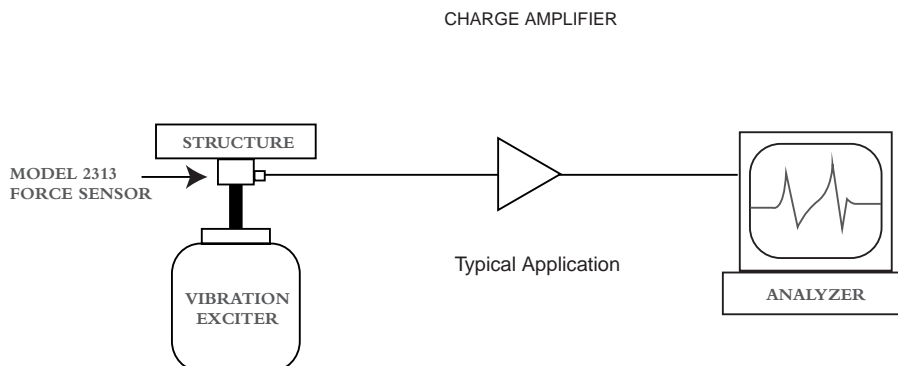
DESCRIPTION

The ENDEVCO® Model 2313 is a quartz, Piezoelectric Force Transducer for use with high force vibration exciters. Its wide temperature range makes it suitable for operation in combined environment testing (vibration and temperature). It is useful in modal analysis where the testing might require more than one amplitude range. The stainless steel body and quartz sensing elements are used for maximum rigidity. The large diameter provides for a large force area, thus allowing a high dynamic range up to 50 000 lb. The high resonance frequency of the ENDEVCO allows for the accurate measurement of short duration, fast rise time force transients.

Designed for use with a charge amplifier, the output is negative for compression and positive for tension. The electrical connector exits axially for use in installations where space is limited. A 3/8-16 tapped mounting hole is provided in the upper platen to accept an impact cap or for threaded attachment to a test article.



Endevco model 133 or OASIS are recommended signal conditioners for use with the 2313 force sensors.



ENDEVCO MODEL 2313

ISOTRON® Force Sensor

SPECIFICATIONS

The following performance specifications are typical values, referenced at +75°F (+24°C), unless otherwise noted.

DYNAMIC CHARACTERISTICS	Units	Value
Compression Range	lbf (k Newtons)	25 000 (111.2)
Sensitivity	pC/lb (pF Newton)	-9 (2)
Natural Frequency (nom.)	kHz	75
Maximum Compression	Lbf (k Newtons)	60 000 (267)
Maximum Tension	Lbf (Newtons)	1 000 (4448)
Linearity	%	± 1

OUTPUT CHARACTERISTICS

Output Polarity	Compression force produces negative output,tension force produces positive output.	
Capacitance	pF	250
Grounding	Signal ground connected to case	

ENVIRONMENTAL CHARACTERISTICS

Temperature Range	°F (°C)	-100 to 500 (-73 to 260)
Humidity		Epoxy Sealed
Maximum Vibration Limit	g	±3 000
Shock Limit	g	5 000
Coefficient of Thermal Sensitivity	%/°F (%/°C)	0.01 (0.005)

PHYSICAL CHARACTERISTICS

Dimensions	See outline Drawing	
Weight	grams	28
Case Material	17-4 PH Stainless Steel	
Connector/Cable	Side-mounted 10-32 receptacle, mates with Endevco 3000 series cable.	
Mounting Threads	3/8-16 Top and Bottom	

CALIBRATION

Supplied	
Sensitivity	pC/lbf

ACCESSORIES SUPPLIED

EHM 1694	Impact Tip
EHM 1695	3/8 - 18 Stud

Notes

1. Tension rating is limited by the transducer design.
2. 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 name Endevco synonymous with reliability.

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