

Piezo-tronic voltage source accelerometer



**A/123/E, A/123/S,
A/123/TS, A/123/TE**

7mV/g nom. • 5/6gm wt. • 125°C max. temp.

Range of lightweight piezo-tronic accelerometers comprising KONIC sensing element, thick film hybrid QVC, packaged to offer choice of side/top entry connector, integral stud or flat base (for adhesive mounting). The /E flat base option has an alumina base providing case isolation.

APPLICATIONS

Include modal analysis of lightweight structures and shock measurement. Low frequency multi point modal measurements are subject to individual phase/gain errors associated with the lower corner frequency of the QVC.

The ratiometric nature of modal analysis however reduces transfer function uncertainty to the associated lower corner frequency variations of individual QVCs.

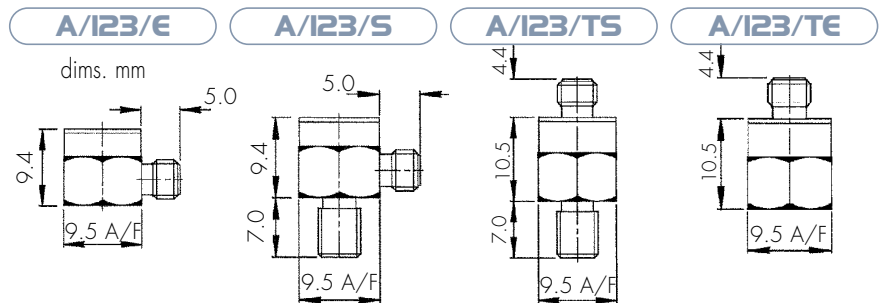
Thus a $\pm 5\%$ corner frequency tolerance associated a $\pm 1_{1/2}^\circ$ phase tolerance at the nominal corner frequency. Peak shock of up to 600g ($\approx 4.5V_{pk}$, O/P limit) can be measured, with certain provisos relating to bandwidth. This type of transducer has a bandpass response characterised by a single low frequency pole and complex high frequency pole air, giving rise to droop and ringing errors, thus placing constraints on pulse width and rise time. Droop will be 10% of peak value for 20m.sec. rectangular pulses, for QVC corner frequency = 0.7Hz.

Overshoot caused by ringing will be 10% for rise time $\approx 30\mu\text{sec.}$, and if excessive may lead to signal clipping.

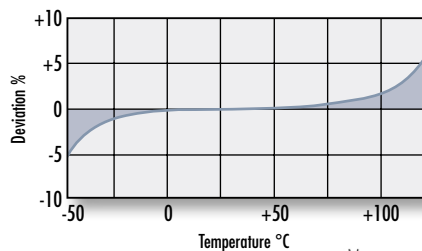
OPTIONS

- > extended low frequency response, 0.5x std. LF response, option/L ;
- > 10mV/g $\pm 5\%$ sensitivity ;
- > 100mV/g sensitivity with constraint on low frequency response
- > wideband temperature calibration -50/+125°C.

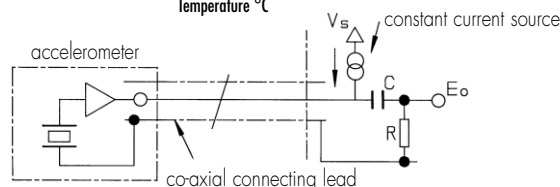
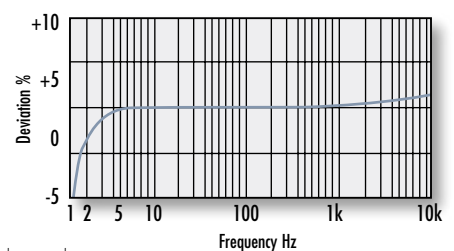
**LIGHT VERSION IN TITANIUM
3.5/3.9gm WT.**



TEMPERATURE RESPONSE



FREQUENCY RESPONSE



CONVERSION MODE

KONIC/2 WIRE QVC

Voltage sensitivity, @ 20°C mV/g	6/9, 10 $\pm 5\%$
Resonant frequency kHz	50
Cross axis error % max	5
Temperature range °C	-50/+125
Voltage sensitivity deviation re 20°C	-5% @ -50°C +5% @ +125°C
Pyro-electric output, g/°C	0.15
Pyro-electric corner freq. Hz	0.005
Base strain sens. g/ μ strain	< 0.01
Max continuous accn. g sine	5000
Supply voltage V	15/35 standard
Supply current mA	2/15
Bias voltage V(20°C)	8.5/9.5
Settling time to 90% final val. secs.	5
Noise level, equiv. mg	3
L.F. corner frequency, Hz	0.7
Saturation limit, equiv. g	500/750
Output resistance, ohms	50
Supply ripple reject. @ 50Hz, dB	60
Case material	s/steel 303 S31
Mounting	adhesive (A/123/E, A/123/TE) integral stud M5x7mm lg. (A/123/S, A/123/TS)
Weight gm	5 (A/123/E, /TE) ; 5.5 (A/123/S, /TS)
Connector	Microdot skt. 10/32 5.5 UNF thd.
Mounting torque Nm	1
Case seal	welded