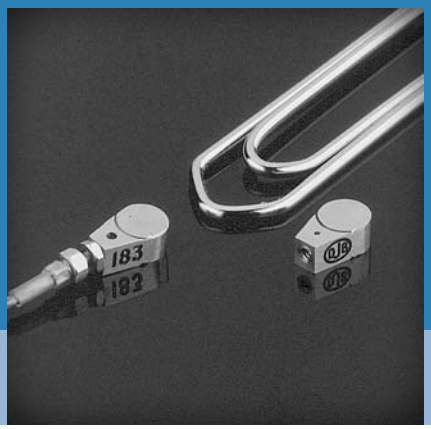


Micro-miniature piezo-electric accelerometer

A/28/E

0.4pC/g nom. • 0.25gm wt.
200°C max. temp.

This ultra small vibration transducer provides virtual transparency applied to lightweight structures, allied to relative freedom from strain induced error. The reliability and performance criteria applied to our transducers generally, welded electrical connections and case seal, are fully implemented in the construction of the A/28/E.

Fabrication constraints limit application of the KONIC sensor to transducer sizes A/25/E and above, thus the A/28/E incorporates a mechanically pre-loaded shear plate sensing element.

Good practice in use of the A/28/E will maximise service life. Removal from a structure involves shearing an adhesive bond, shock means are not adviseable, use the detachment tool provided.

Abrasive cleaning of the attachment face will reduce base thickness over time, sparing use of adhesive will aid longevity. Signal outlet is via a surface contact socket.

Mating connector preload torque should be 5cNm with the locknut tightened to 10cNm for signal integrity to 5,000g.

A 0.8mm dia. softline cable is available specifically for the A/28/E.

Although graded antimicrophonic a certain amount of tribo-electric induced noise will be generated. This, together with cable induced strain, may be minimised by anchoring the cable adjacent to the transducer, which should reduce measurement uncertainty to around 5% @ 10g.

Minimum g threshold is determined by instrumentation noise and environmental factors.

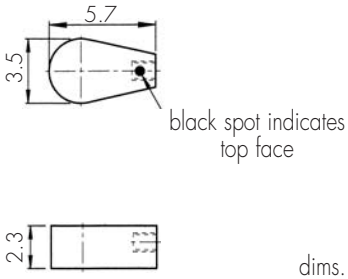
A typical instrumentation (charge amplifier) noise spectral density (nsd) is around 0.02fC $\sqrt{Hz}$ above 100Hz, increasing by 3dB / octave below 100Hz. Wideband noise is nsd x $\sqrt{\text{bandwidth}}$, i.e. 0.006pC/100kHz and assumes zero input capacitance, increasing by a further 0.006pC/nF input capacitance (assuming 1nF charge amplifier transfer capacitance).

Additionally the $\sqrt{\omega^2}$ correspondence between displacement and acceleration coupled with the displacement dependent nature of strain and cable noise renders A/28/E use prone to error at low frequencies ; specific attention should be focussed on cable induced strain.

options

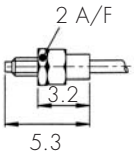
> available as a tri-axial designated type A/38 and A/38-1

A/28/E

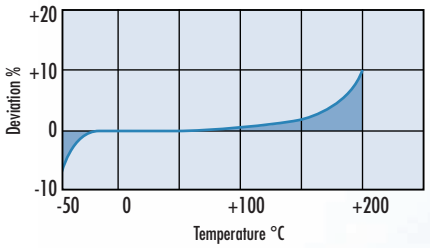


dims. mm

L8 CONNECTOR

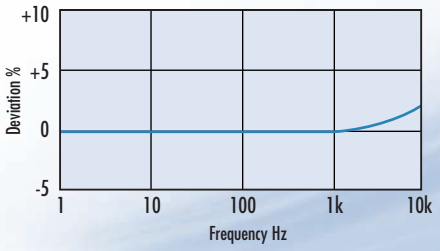


TEMPERATURE RESPONSE



FREQUENCY RESPONSE

Results obtained using loctite 496 adhesive



CONVERSION MODE	KONIC
Charge sensitivity pC/g	0.3/0.6
Capacitance pF	250/420
Resonant frequency kHz	> 45
Cross axis error % max	5
Temperature range °C	-50/+200
Charge sensitivity deviation re 20°C	-5 % @ -50°C +10 % @ +200°C
Max continuous accn. g sine	5000
Max shock g pk., rise time m sec.	10000, 20
Case material	s/steel 303 S31
Mounting	adhesive
Weight gm	0.25
Connector	L8
Case seal	welded