Micro g piezo-electric accelerometer

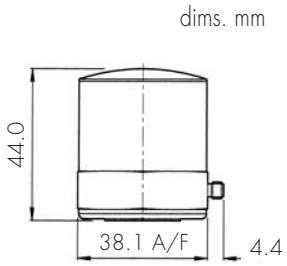
A/800
A/800/T
A/800/TC

9nC/g nom. • 400gm wt.
150°C max. temp.

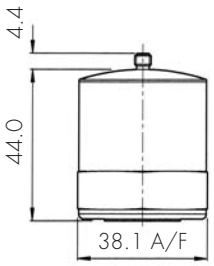
Highest sensitivity multiple shear plate vibration transducer, intended for micro g level measurement. Virtual immunity to strain input side effects provides guarantee of low frequency measurement integrity. System noise level of 10^{-2}pC is equivalent to 1mg. With bandwidth restricted to 2kHz, 1 octave below resonance, noise floor should be significantly below this. Noise level vs. upper corner frequency for the CA/04/N charge amplifier, A/800 source and nominal l0Mtr. cable is shown in Fig.1. Bear in mind that charge amplifier noise increases as a function of input capacitance - noise assessment should be made with the charge amplifier input correctly terminated. The transducer adds mass at its point of attachment to a structure, thus imposes a transparency constraint above which data corruption will be excessive.

The single degree of freedom example, $\omega = \sqrt{S/M+M_t}$ where Mt represents the transducer mass, reduces ω by 3% for a transducer adding 10% to the structure mass. Application area of the A/800 is thus limited in scope to low level vibration surveys in the civil engineering and heavy engineering domain.

A/800

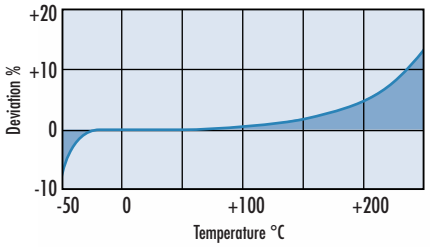


A/800/T



A/800/TC

TEMPERATURE RESPONSE



FREQUENCY RESPONSE

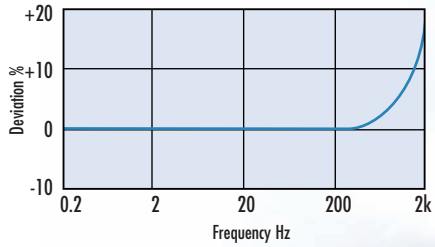
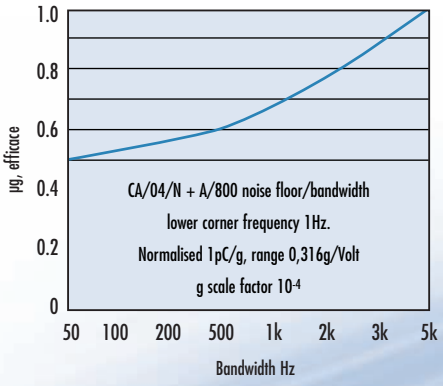


FIG. 1



CONVERSION MODE	SHEAR PLATE
Charge sensitivity nC/g	7/11
Capacitance nF	26/31
Resonant frequency kHz	4
Cross axis error % max	5
Temperature range °C	-50/+150
Charge sensitivity deviation re 20°C	-5% @ -50°C +15 % @ +150°C
Pyro-electric output, g/°C	0.2
Pyro-electric corner freq. Hz	0.001
Base strain sens. g/µ strain	10^{-4}
Max continuous accn. g sine	500
Case material	s/steel 303 S31
Mounting	base tapped 1/4 UNF x 4mm deep
Weight gm	400/407 (/TC)
Connector	Microdot skt. 10/32 UNF thd. (A/800, A/800/T) TNC skt. (A/800/TC)
Case seal	welded, hermetic connector (TNC)

options

- hermetic TNC connector version : ref. A/800/TC
- wideband temperature calibration -50/+150°C.