



Piezoelectric Accelerometer Type CA 250 M2XX

CHARACTERISTICS

- ▶ Qualified for flight on Ariane 5 launcher (ESA-CNES-SEP-Arianespace Program)
- ▶ High survival temperature range:
-253°C to +777°C
- ▶ Differential stud eases integral cable mounting
- ▶ Proven reliability

FEATURES

- ▶ VC2 type crystal element
- ▶ Frequency response:
1 Hz to 20 000 Hz
- ▶ Sensitivity:
1 pC/g

WEIGHT

- ▶ Accelerometer:
35 g
- ▶ Integral cable:
14 g/m

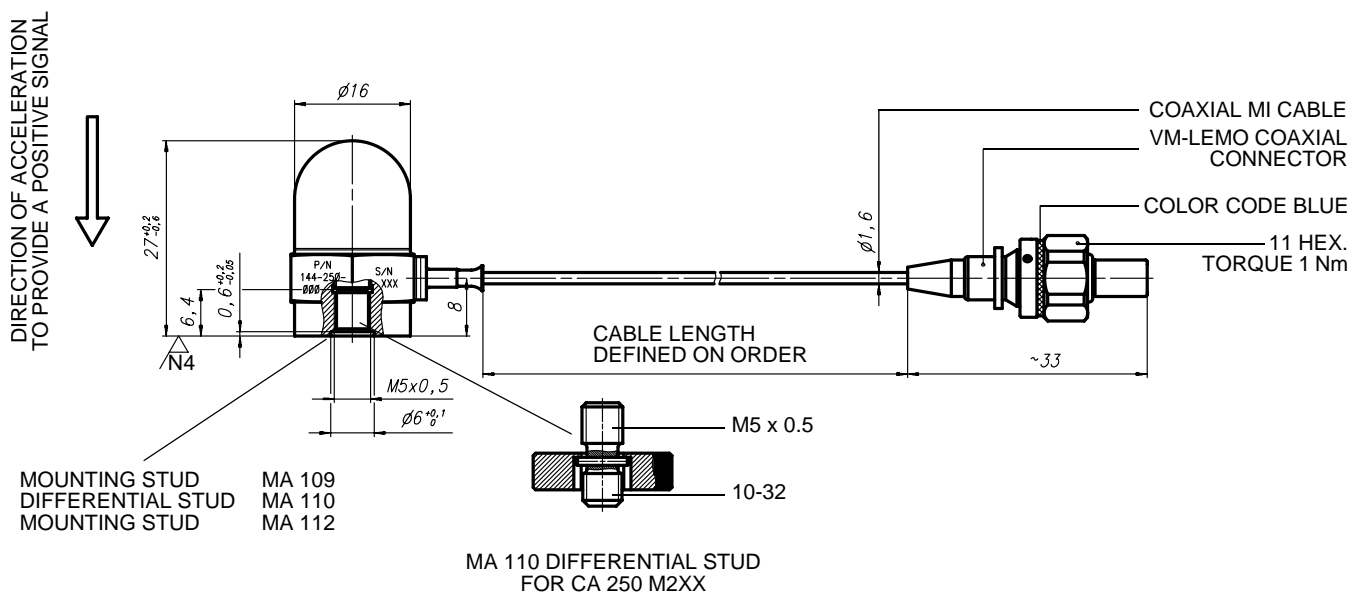


DESCRIPTION

The CA 250 M2XX compression mode accelerometer uses VC2 type single crystal material. The device can operate in extreme temperature ranges and is fitted with an integral mineral insulated coaxial cable terminated with a Vibro-Meter / Lemo connector. The accelerometer is matched to the TCC 1XX charge converter.

Where space is available for mounting the accelerometer with its integral cable, the standard MA 109 or MA 112 stud can be used. The MA 110 differential stud is available for mounting when rotating the unit is not possible.

MECHANICAL DRAWING



SPECIFICATIONS

ELECTRICAL

- Input power requirements : None
- Signal transmission : Unipolar system, charge output
- Signal processing : Charge converter

OPERATING

(at 23°C±5°C)

- Sensitivity (at 120 Hz) : 1 pC/g ±5%
- Dynamic measuring range : 0.1 g to 5000 g peak (random)
- Overload capacity : Up to 7000 g peak (spikes)
- Linearity : ±2% over dynamic measuring range, 1% up to 500 g
- Transverse sensitivity : < 5%
- Resonance frequency (mounted) : > 48 kHz nominal

Frequency response

- 1 to 10 000 Hz *nom.* : $\pm 5\%$ (lower cutoff frequency is determined by electronics/cable mounting)
- 20 000 Hz : $< 10\%$

Internal insulation resist. : Min. $10^9 \Omega$

Capacitance

- *Transducer* : 120 pF/m nominal pole/ground
- *Integral cable* : 220 pF/m nominal pole/ground

ENVIRONMENTAL

Temperature range : -253°C to $+727^\circ\text{C}$

Shock acceleration : < 7000 g peak (half sine, 0.5 ms) along sensitive axis

Pressure : < 50 bar

Base strain sensitivity : < 0.03 g/ $\mu\epsilon$

Acoustic sensitivity : 1 g RMS at 174 dB

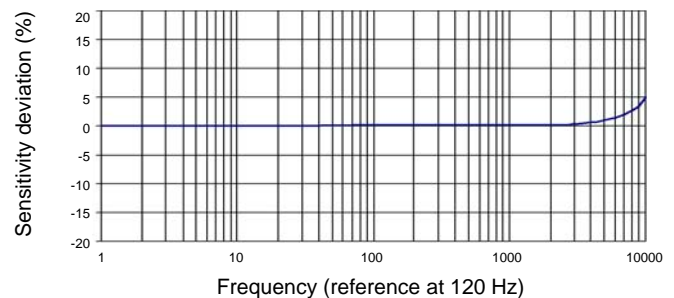
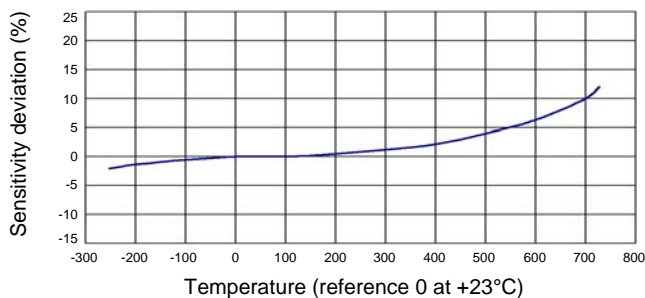
Corrosion, humidity : Inconel 600, hermetically welded

Mounting : Using 10-32 UNF2B or M5 x 0.5 stud. Max. surface roughness is N4 ($R_a \leq 0.2$ mm).

CALIBRATION

Dynamic calibration at factory at 5 g peak and 120 Hz ($+23^\circ\text{C}$). No subsequent calibration necessary.

TYPICAL RESPONSES



ACCESSORIES

MA 109 mounting stud, M5 x 0.5 / 10-32

See drawing 809-109-000 D 01

MA 112 mounting stud, M5 x 0.5 / M5 x 0.5

See drawing 809-112-000 D 01

MA 110 differential mounting stud, M5 x 0.5 / 10-32

See drawing 809-110-000 D 01

TCC 1XX Charge converter

See data sheet 278-002

EC 212, EC 272, EC 906, EC 907 cable assembly

See drawing 912-XXX-000 D 01 for cable lengths and connector types

Triaxial mounting adapter available

ORDERING INFORMATION

- Description / Ordering No.	CA 250 M2XX	/	144-250-000-2X	with M5 x 0.5 Tapped hole
				1: cable length 1m3: length 3m5: length 5m
	MA 109	/	809-109-000-01	See entry for MA 109 in the Accessories list
	MA 110	/	809-110-000-01	See entry for MA 110 in the Accessories list
	MA 112	/	809-112-000-01	See entry for MA 112 in the Accessories list
	EC 212	/	912-212-000-0X	See drawing 912-212-000 D 01 for softline cable assembly details
	EC 272	/	912-272-000-0X	See drawing 912-272-000 D 01 for softline cable assembly details
	EC 906	/	912-906-000-0X	See drawing 912-906-000 D 01 for softline cable assembly details
	EC 907	/	912-907-000-0X	See drawing 912-907-000 D 01 for softline cable assembly details



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