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# CA 250 M301 CA 250 M901

## Piezoelectric Accelerometer Type CA 250 M301 / M901

### CHARACTERISTICS

- Qualified for flight on Ariane 5 versatile launcher (ESA-CNES-Snecma Moteurs-Arianespace Program)
- High-temperature capability -269°C to +777°C
- High temperature limited by the connector/cable
- Differential stud eases mounting
- Proven reliability

### FEATURES

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

### WEIGHT

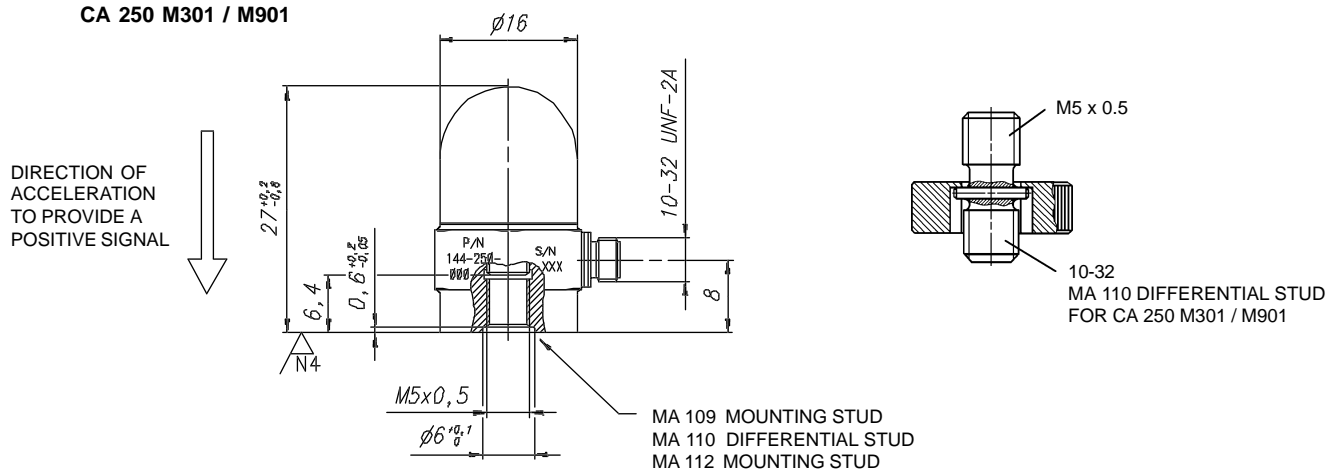
**Accelerometer** : 35 g


### DESCRIPTION

The use of VC2 type single crystal material in the CA 250 compression mode accelerometer makes it an extremely stable device.

The transducer is designed for an extremely wide temperature range. It is fitted with a 10-32 receptacle. The high temperature operation is limited only by the mating connector/cable.

Where space is available for mounting the accelerometer, the standard MA 109 or MA 112 stud can be used. A unique MA 110 differential stud is available for mounting the CA 250 (M301 / M901) accelerometer without having to rotate it.

**CA 250 M301 / M901**


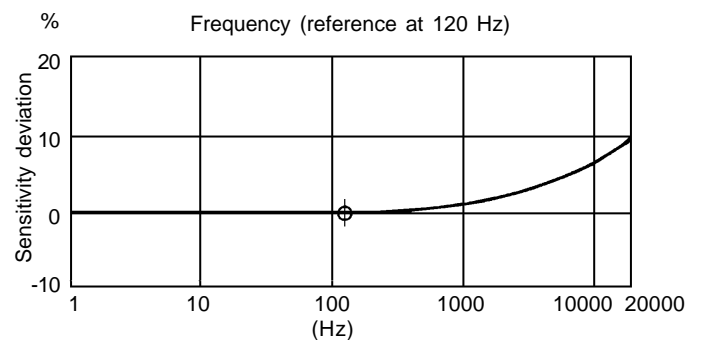
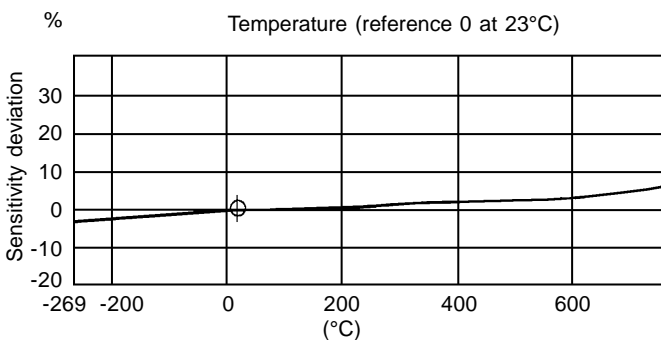
# SPECIFICATIONS

# CA 250 M301 / M901

**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** (random) : 0.1 g to 5000 g peak  
**Overload capacity** (spikes) : Up to 7000 g peak  
**Linearity** : ±2% over dynamic measuring range, 1% up to 500 g  
**Transverse sensitivity** : <5%  
**Resonant frequency** (mounted) : >48 kHz nominal  
**Frequency response**  
 - 1 to 10,000 Hz nominal : ±5% (lower cutoff frequency is determined by the electronics and cable mounting)  
 - 20,000 Hz : <10%  
**Internal insulation resist.** : Min. 10<sup>9</sup>Ω

**Capacitance**  
 - Transducer : 120 pF nominal pole/ground  
**ENVIRONMENTAL**  
**Temperature range** : -253°C to +727°C  
**Shock acceleration** : <7000 g peak (half sine, 0.5ms) along sensitive axis  
**Pressure** : <50 bar  
**Base strain sensitivity** : <0.03 g/microstrain (with HP 0.3 Hz - 3 dB)  
**Acoustic sensitivity** : (under 180 dB SPL) < 1 g RMS equivalent  
**Corrosion, humidity** : Inconel 600, hermetically sealed receptacle  
**Mounting** : On surface roughness max. N4 (Ra≤0.2mm) stud 10-32 UNF2B or M5 x 0.5  
**CALIBRATION**  
 Dynamic calibration at factory at 5 g peak and 120 Hz (+23°C).  
 No subsequent calibration necessary.

## Typical Responses



## Accessories:

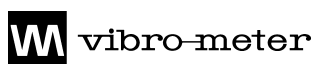
- Stud M5 x 0.5 / 10-32 MA 109 : See drawing 809-109-000 D 01
- Stud M5 x 0.5 / M5 x 0.5 MA 112 : See drawing 809-112-000 D 01
- Differential stud M5 x 0.5 / 10-32 MA 110 : See drawing 809-110-000 D 01
- Charge converter : See data sheet 278-002 TCC 1XX
- Softline cables EC 242 / 247 / 264 / 904 : See drawing 912-XXX-000 D001 / D011 as appropriate
- Triaxial mounting adaptor available

## Ordering Information :

- Description / Ordering No : CA 250 / 144-250-000-30 Test bed version, tapped hole M5 x 0.5  
CA 250 / 144-250-000-90 Flight qualified version, tapped hole M5 x 0.5
- MA 109 / 809-109-000-01 Stud M5 / 10-32 for CA 250 M5 x 0.5
- MA 110 / 809-110-000-01 Differential stud M5 / 10-32 for CA 250 M5 x 0.5
- MA 112 / 809-112-000-01 Stud M5 / M5 x 0.5 for CA 250 M5 x 0.5
- EC 242 / 247 / 264 / 904 See drawing 912-XXX-000 D001 / D011, as appropriate, for cable lengths and connector types



Due to the continual development of products, Vibro-Meter reserves the right to modify these specifications without forewarning.



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