

Piezoelectric Accelerometer

FEATURES

- Designed for high temperature gas turbine applications
- Continuous operation up to 500°C
- High output of 50 pC/g
- Improved transverse frequency resonance
- 4-hole mounting according to ARINC Characteristic 554
- Certified for use in potentially explosive atmospheres
- Construction:
Hermetically welded Inconel 600 superalloy
- Frequency response:
5 Hz to 3 000 Hz



DESCRIPTION

The CA 306 series of high temperature accelerometers has been designed specifically for gas turbine applications.

The accelerometers feature a rugged design with hermetically sealed connectors.

An integral mineral insulated (MI) cable with stainless

steel overbraid ensures signal integrity even in the most hostile environments.

The differential output signal minimizes noise pick-up due to electrical ground potentials.

A version with side connector is available when an integral cable is not required.



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SPECIFICATIONS

GENERAL

Input power requirements	: None
Signal transmission	: 2 pole system insulated from casing, charge output
Signal processing	: Charge amplifier

OPERATING

(at 23°C ± 5°C)

Sensitivity (at 120 Hz)	: 50 pC/g ± 5%
Dynamic measuring range (random)	: 0.01 g to 100 g peak
Overload capacity (spikes)	: Up to 200 g peak
Linearity	: ±1% over dynamic measuring range
Transverse sensitivity	: <5%
Resonant frequency	: >15 kHz
Frequency response (typical)	: ± 5% between 5 and 3 000 Hz (lower cut-off frequency is determined by electronics used)
Internal insulation resistance	: Min. 10 ⁹ Ω pole-ground Min. 10 ⁹ Ω pole-pole

ENVIRONMENTAL

Temperature range

• <i>Transducer and cable</i> (VM-Lemo connector)	: -55°C to 500°C (-65°C to 125°C)
Temperature response	: ± 10% between -55°C and 500°C
Shock acceleration	: <1000 g peak (1 ms half sine wave) along sensitive axis
Base strain sensitivity	: ≤10 ⁻⁴ g/με
Corrosion, humidity	: Inconel 600, hermetically welded
Use in explosive atmospheres: • <i>EC type examination certificate</i>	KEMA 04 ATEX 1294 II 1 G (Zones 0, 1, 2) Ex ia IIC T6 to T510



For specific parameters of the mode of protection concerned and special conditions for safe use, please refer to the "EC type examination certificate" that is available from Vibro-Meter SA on demand.

• <i>cCSAus standard</i>	: Certificate 1550831, Class I, Division 1, Groups A, B, C and D Ex ia T6 to T1
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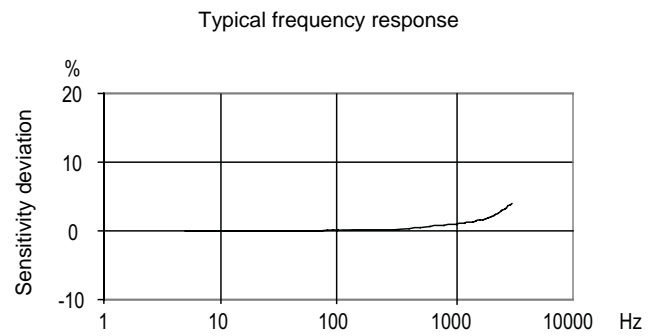
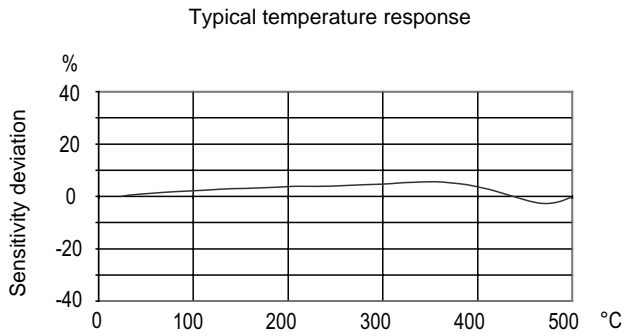
MECHANICAL

Mounting	: Four 6-32 NC bolts (according to ARINC 554) or M3.5 bolts, screw torque 5 Nm. No need for electrical insulation of mounting surface.
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CALIBRATION

Dynamic calibration at factory at 5 g peak and 120 Hz (23°C). No subsequent calibration necessary.

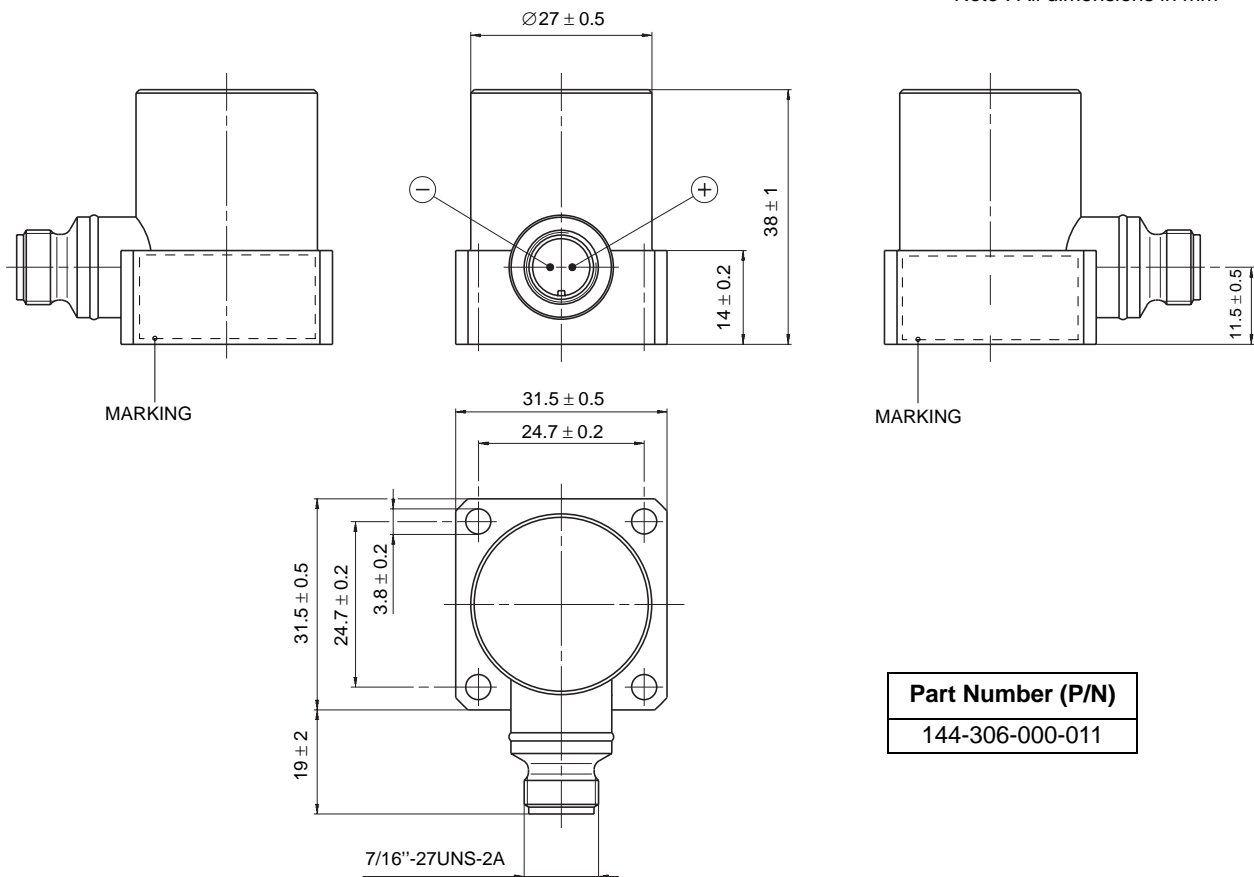
TYPICAL RESPONSE CURVES



DIMENSIONS AND ORDERING INFORMATION

CA 306 Version 011

Note : All dimensions in mm

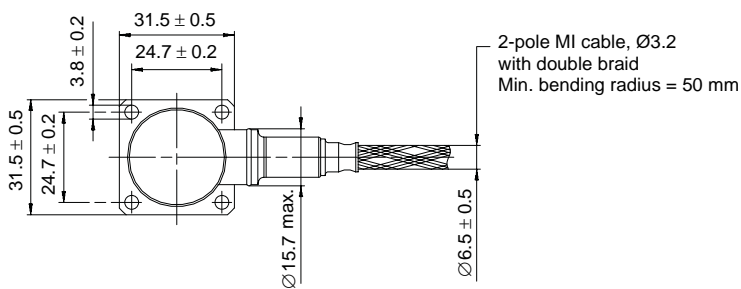
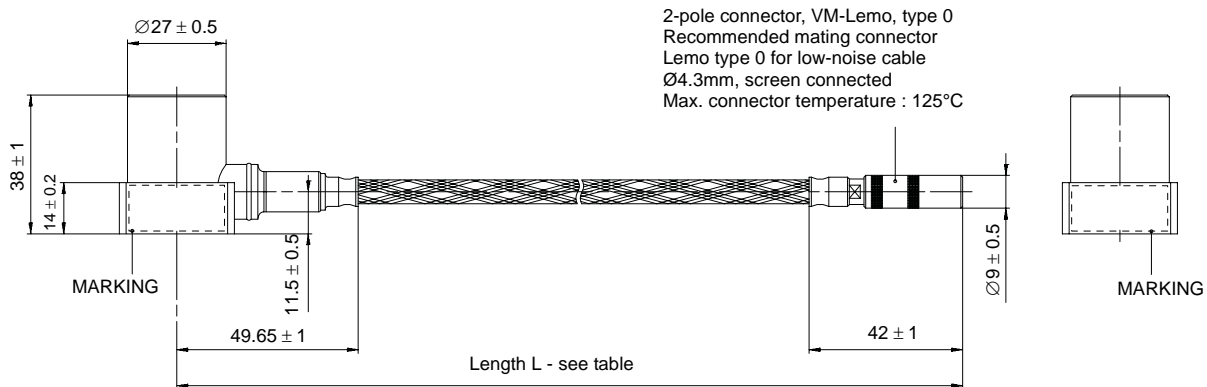


Part Number (P/N)
144-306-000-011

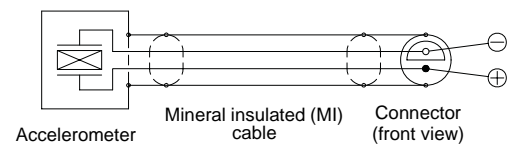
DIMENSIONS AND ORDERING INFORMATION (Continued)

CA 306 Version 1XX

Note : All dimensions in mm



Wiring diagram

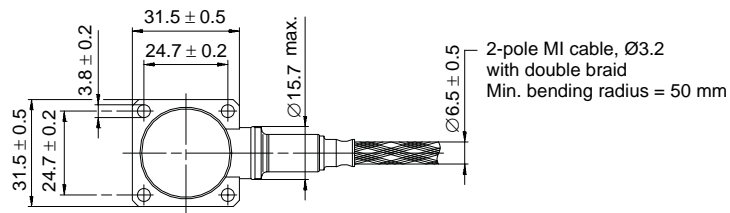
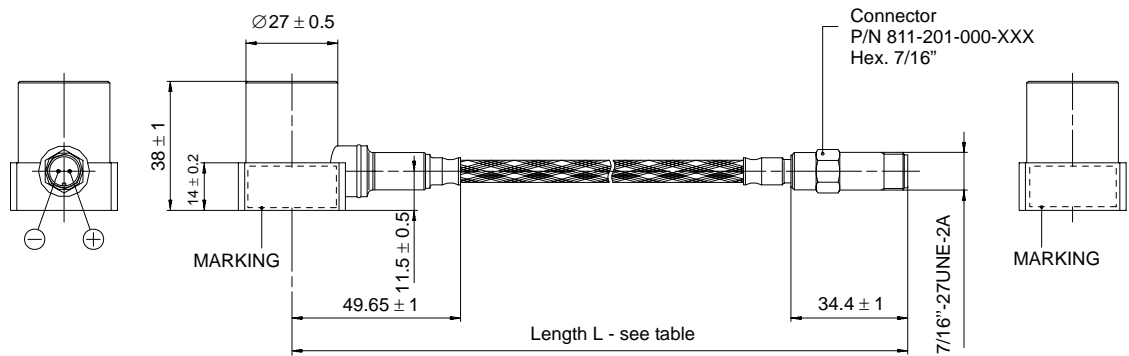


Part Number (P/N)	Length L in mm
144-306-000-111	3000 ± 100
144-306-000-121	6000 ± 150
144-306-000-131	9000 ± 200
144-306-000-141	12000 ± 200

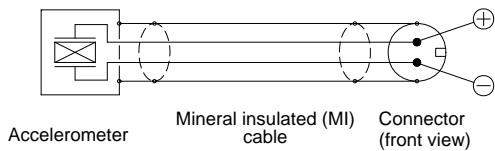
DIMENSIONS AND ORDERING INFORMATION (Continued)

CA 306 Version 3XX

Note : All dimensions in mm



Wiring diagram



Part Number (P/N)	Length L in mm
144-306-000-311	3000 ± 100
144-306-000-321	6000 ± 150
144-306-000-331	9000 ± 200
144-306-000-341	12000 ± 200