



## Piezoelectric Accelerometer

### FEATURES

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- 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

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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

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### 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 <sup>9</sup> Ω pole-ground<br>Min. 10 <sup>9</sup> Ω pole-pole                  |

### ENVIRONMENTAL

|  |   |
|--|---|
| Temperature range                                    |   |
| • <i>Transducer and cable</i><br>(VM-Lemo connector) | : -55°C to 500°C<br>(-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 <sup>-4</sup> 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,<br>Class I, Division 1, Groups A, B, C and D<br>Ex ia T6 to T1 |
|--------------------------|---|

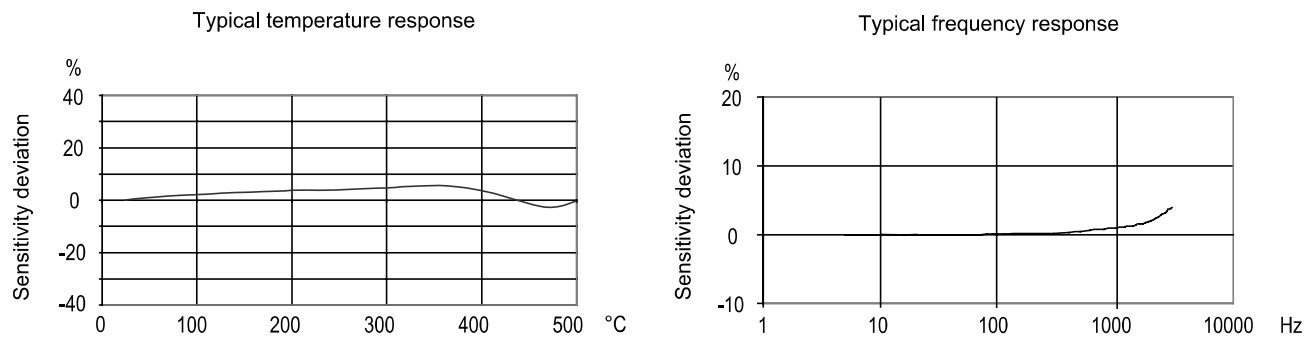
### MECHANICAL

|          |  |
|----------|--|
| 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.

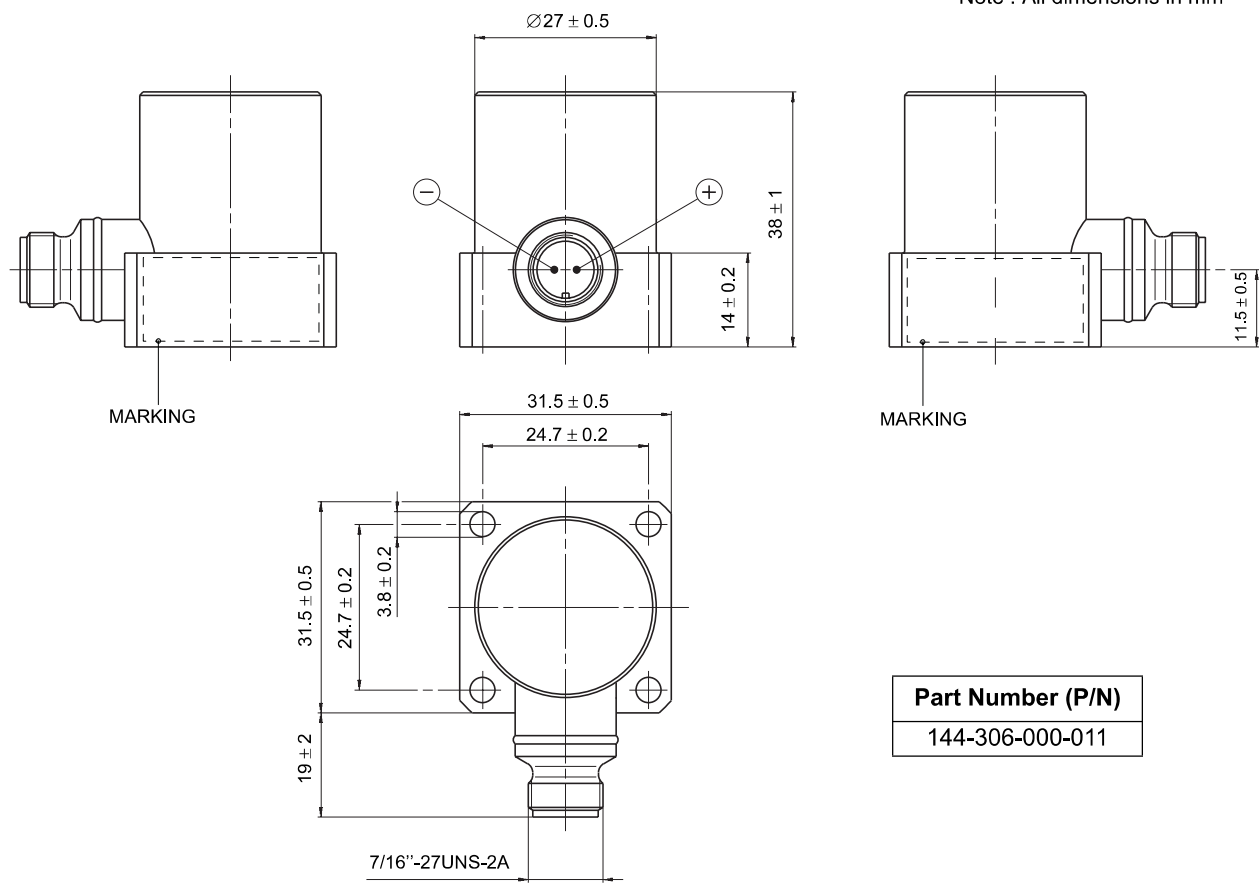
TYPICAL RESPONSE CURVES



DIMENSIONS AND ORDERING INFORMATION

CA 306 Version 011

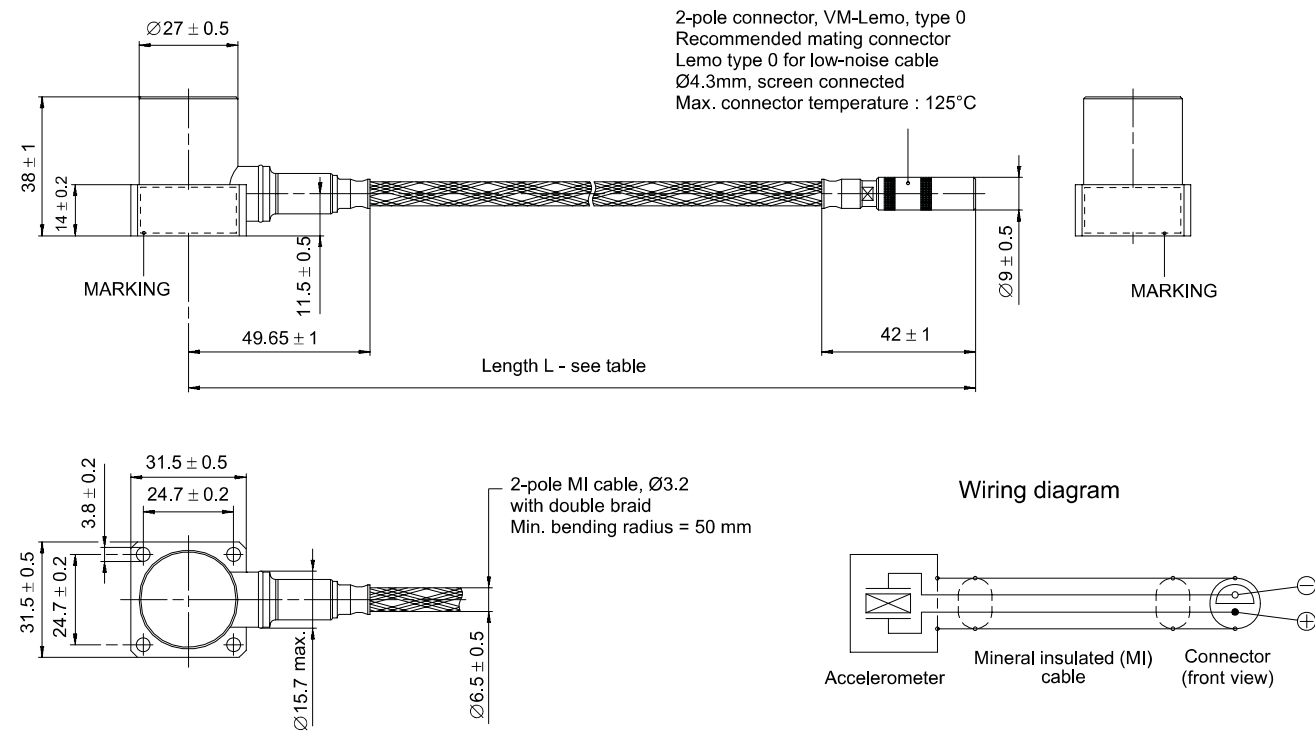
Note : All dimensions in mm



**DIMENSIONS AND ORDERING INFORMATION** *(Continued)*

**CA 306 Version 1XX**

Note : All dimensions in mm

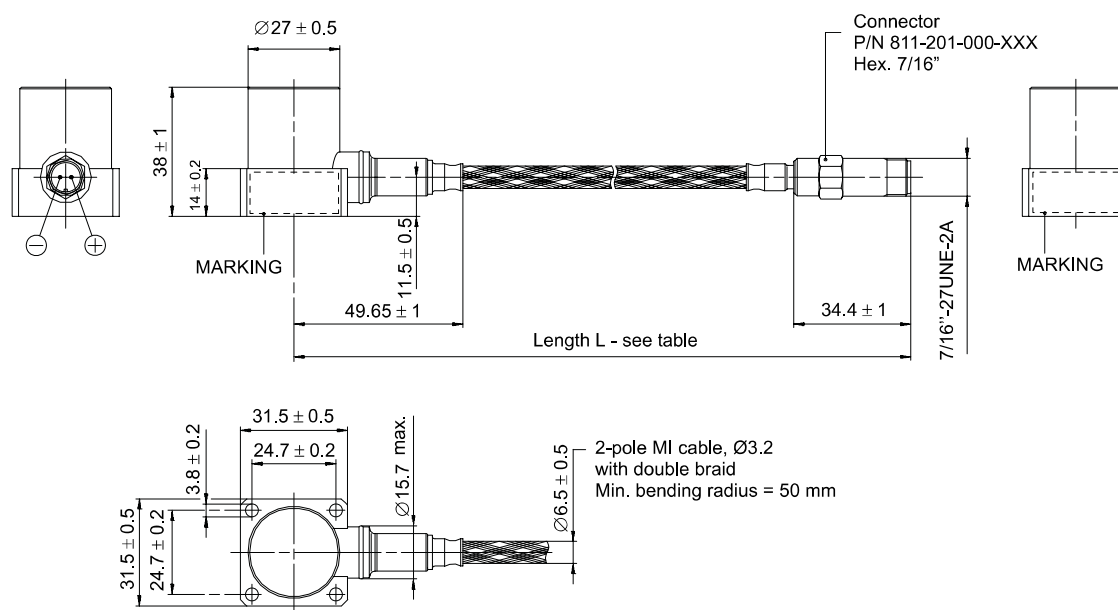


| Part Number<br>(P/N) | Length L<br>in mm |
|----------------------|-------------------|
| 144-306-000-111      | 3000 ± 100        |
| 144-306-000-121      | 6000 ± 150        |
| 144-306-000-131      | 9000 ± 200        |
| 144-306-000-141      | 12000 ± 200       |

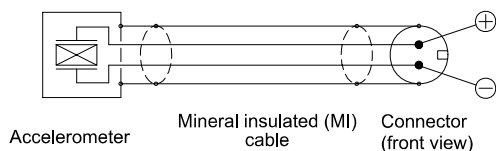
### DIMENSIONS AND ORDERING INFORMATION (Continued)

#### CA 306 Version 3XX

Note : All dimensions in mm



Wiring diagram



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



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