

# Vibro Meter 143-103-000-931 Manual

Brand	Vibro Meter
Product Series	Vibro Meter
Product Type	crystal element

## Description

143-103-000-931

Vibro Meter Piezoelectric pressure transducer

### FEATURES

- » From the Vibro-Meter® product line
  - » Extreme temperature capability -196 to +700°C
  - » High-pressure capability up to 250 bar
  - » For use in gas turbines
  - » Operational in primary circuit of BWR, APWR, BWR, ABWR, FBR and HTGR
  - » Proven reliability
  - » Meets NRC guide 1.20, IEEE 323-1974
  - » Certified for use in potentially explosive atmospheres
  - » Internal case insulation
  - » VC2 type crystal element
- Frequency response: 2 to 10000Hz Sensitivity: 232 pC/bar

### DESCRIPTION

The CP 103 dynamic pressure transducer uses a VC2 type single crystal material in compression mode and has been specially designed to minimise sensitivity to acceleration.

This produces an extremely stable measuring instrument that is suitable for long-term monitoring or development testing.

It is fitted with an integral mineral insulated cable (twin conductors) which is terminated with either a LEMO or a high-temperature connector from VibroMeter.

### General

Input power requirements : None

Signal transmission : 2-pole system insulated from casing, charge output

Signal processing : Charge converter

### Operating

At +23°C ±5°C (+73°F ±41°F)

Sensitivity (at 2 Hz) : 232 pC/bar (16 pC/psi) ±5% typical

Dynamic measuring range (random) : 0.00004 to 20 bar nominal

Overload capacity (spikes) : Up to 250 bar

Linearity : ±1% over dynamic measuring range

Acceleration sensitivity : ≤0.05 pC/g (≤0.000 21 bar/g)

Resonant frequency : >50 kHz

Frequency response : 2 to 10000 Hz  $\pm 5\%$  (the lower cut-off frequency is determined by the electronics used)

Internal insulation resistance : Min. 109  $\Omega$ .

107  $\Omega$  at 300°C (+572°F)

Capacitance (nominal)

Pole to pole : 135 pF for transducer + 200 pF/m of cable

Pole to casing : 18 pF for transducer + 300 pF/m of cable

Environmental

Temperature range

Continuous operation : -54 to +650°C (-65 to +1202°F)

Extreme operation : -196 to +700°C (-321 to +1292°F)

Shock acceleration : <2000 g peak (half sine 1 ms) along sensitive axis

Corrosion, humidity : INCONEL® alloy 600, hermetically welded

Radiation

Gamma flux : 1011 erg/g no effect

Neutron flux : 1018 n/cm<sup>2</sup> no effect

Mechanical

Weight

Pressure transducer (nominal) : 120 g

MI cable : 50 g/m

MI cable with overbraid : 140 g/m

Mounting

Flange :  $\varnothing 27.5/21$  mm x 3 mm

Calibration

Dynamic calibration at factory at 1 bar peak and 2 Hz (+23°C (+73°F)). No subsequent calibration necessary

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