Vibro Meter Vibro Meter Series Service Manual

143-216-000-011

1. Description

143-216-000-011

3. Product Information

www.autronexa.com

143-216-000-011

Vibro Meter Piezoelectric pressure

transducer

FEATURES

» From the Vibro-Meter® product line

» Extreme temperature capability:

−70 to 520°C

» High-pressure capability:

up to 350 bar

» Pressure sensitivity:

200 pC/bar

» Frequency range:

2 Hz to 15 kHz

» Internal case insulation

» Certified for use in potentially explosive

atmospheres

APPLICATIONS

» Dynamic pressure monitoring over a wide

temperature range, requiring high reliability

DESCRIPTION

The use of man-made piezoelectric material in the

CP 216 a compression-mode dynamic pressure

transducer produces an extremely stable device.

The CP 216 is designed for long-term monitoring or

development testing over wide temperature ranges in

extreme environments, such as gas turbines.

The transducer is fitted with an integral mineral

insulated cable (twin conductors) that can be

terminated with either a LEMO connector or a hightemperature connector developed by Vibro-Meter.

Cable assemblies are available to connect the

transducer to an IPC 704 signal conditioner.

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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 ±9°F)

Sensitivity (typical, at 2 Hz) : 200 pC/bar (13.8 pC / psi)

Sensitivity deviation : See Typical response curves on page 3

Dynamic measuring range (random) : 0.0005 bar to 250 bar (0.007 psi to 3626 psi)

Overload capacity (spikes) : Up to 350 bar (5076 psi)

(static + dynamic components)

Linearity : < ±1% over dynamic measuring range

Acceleration sensitivity : ≤ 0.5 pC/g (0.0025 bar/g, 0.036 psi/g)

Resonant frequency : > 80 kHz

Frequency response : 2 to 15000 Hz ±5%.

The lower cutoff frequency is determined by the electronics used.

Capacitance (nominal)

Pole to pole : 320 pF for transducer + 200 pF/m of cable

Pole to casing : 13 pF for transducer + 300 pF/m of cable

Internal insulation resistance : > 109 Ω.

> 5x104 at 450°C (842°F).

Environmental

Transducer temperature range

Continuous : −54 to 470°C (−65 to 878°F)

Extreme applications : −70 to 520°C (−94 to 968°F).

See Typical response curves on page 3.

Connector temperature range

Vibro-Meter high-temperature connector : −70 to 650°C (−94 to 1202°F)

LEMO connector : −55 to 155°C (−67 to 311°F)

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

Corrosion, humidity : NIMONIC® alloy 90, hermetically welded.

(INCONEL® alloy 600 for the cable.)

Radiations

Gamma flux : 1010 erg/g no effect

Neutron flux : 1017 n/cm2 no effect

Calibration

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

Mechanical

Dimensions : See Mechanical drawings on page 4

Weight

Transducer : 12 g

Cable : 25 g/m

Cable : Mineral insulated (MI) cable, two conductors

Connector : LEMO or Vibro-Meter high temperature

143-216-000-011 ORDERING INFORMATION

To order please specify

Type CP 216

Designation Piezoelectric pressure transducer with LEMO connector

Cable length Defined when ordering

Ordering number 143-216-000-011

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