

Vibro Meter Vibro Meter Series Service Manual

144-201-000

1. Description

144-201-000 Vibro Meter

3. Product Information

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144-201-000 Vibro Meter

KEY FEATURES AND BENEFITS

From the vibro-meter® product line

High sensitivity: 100 pC/g

Frequency response: 0.5 to 6000 Hz

Temperature range: –55 to 260°C

Available in standard versions and

Ex versions certified for use in potentially
explosive atmospheres

Symmetrical sensor with internal case

insulation and differential output

Hermetically welded

austenitic stainless-steel case and

heat-resistant stainless-steel protection hose

Integral cable

APPLICATIONS

Industrial vibration monitoring

Hazardous areas (potentially explosive
atmospheres) and/or harsh industrial
environments

General

Input power requirements : None

Signal transmission : 2-pin system, insulated from case, charge output

Signal processing : Charge converter (IPC70x signal conditioner)

Operating

(At 23°C ±5°C, 73°F ±9°F)

Sensitivity (at 120 Hz with 5 g,

see Calibration on page 4)

: 100 pC/g ±5%

Dynamic measurement range : 0.01 to 400 g/peak

Overload capacity (spikes) : Up to 500 g peak

Linearity

0.01 to 20 g (peak) : ±1%

20 to 400 g (peak) : ±2%

Transverse sensitivity : ≤3%

Resonant frequency : >22 kHz nominal

Frequency response

0.5 to 6000 Hz : ±5%

(lower cutoff frequency is determined by the signal conditioner)

Typical deviation at 8 kHz : +10%

Internal insulation resistance : 109 Ω minimum

Capacitance (nominal)

Sensor : 5000 pF pin to pin.

10 pF pin to case (ground).

Cable

(per metre of cable)

: 105 pF/m pin to pin.

210 pF/m pin to case (ground).

Environmental

Temperature range

Continuous operation : –55 to +260°C (–67 to +500°F) for sensor.

–55 to +200°C (–67 to +392°F) for integral cable.

Short-term survival : –70 to +280°C (–94 to +536°F) for sensor.

–62 to +250°C (–80 to +482°F) for integral cable.

Temperature sensitivity error (with respect to 23°C, 73°F)

–55 to +23°C

(–67 to +73°F)

: 0.25%/°C

+23 to 260°C

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(-73 to +500°F)

: 0.1%/°C

Corrosion, humidity

Sensor : Austenitic stainless-steel (1.4441), hermetically welded

Protection hose : Heat-resistant stainless-steel (1.4541), hermetically welded

Note: The sensor and the flexible protection hose are hermetically welded to one another to create a sealed leaktight assembly that is impervious to 100% relative humidity (RH), water, steam, oil, and sea-salt atmospheres, in addition to other potential contaminants such as dust, fungus and sand.

Base-strain sensitivity : $0.15 \times 10^{-3} \text{ g}/\mu\epsilon$ at $250 \mu\epsilon$ peak-peak

Shock acceleration : $\leq 1000 \text{ g}$ peak (half sine, 1 ms duration)

Physical

Case (housing) material : Austenitic stainless steel

Weight

Sensor : 250 g (0.55 lb) approx.

Cable : 135 g/m (0.30 lb/m) approx.

Mounting : Four M6 x 35 Allen screws and four M4 spring-lock washers with a nominal tightening torque of 15 Nm (11.1 lb-ft).

Note: Electrical insulation of the mounting surface is not required.

See Mounting adaptors in Accessories on page 6.

Refer also to the Vibration measurement chains using CAxxx piezoelectric accelerometers installation manual.

Connector : Terminated with flying leads

Ordering Information :

To order please specify:

- Type and designation : CA 201 Piezoelectric accelerometer

- Ordering No. : With integral cable 3 m 144-201-000-2

With integral cable 6 m 144-201-000-4

Ex i with integral cable 3 m 144-201-000-1

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