

CA 303 Series

Piezoelectric Accelerometers Type CA 303 Series

FEATURES

- Designed for high temperature gas turbine applications
- Continuous operation up to 455°C (850°F)
- High output of 50 pC/g
- Improved transverse frequency resonance

CHARACTERISTICS

- Frequency response:
5 Hz to 3000 Hz
- Sensitivity:
50 pC/g
- Construction:
Welded, Inconel 600 stainless steel

DESCRIPTION

The CA 303 series of high temperature accelerometers are designed specifically for gas turbines applications.

They feature a rugged design with hermetically sealed connectors and 1/4" mounting bolts.

An integral mineral insulated (MI) cable with stainless steel overbraid ensures signal integrity even in the most hostile environments.



CA 303
Version 0XX



CA 303
Version 1XX

(Other versions described later in data sheet)

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.

SPECIFICATIONS

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

OPERATING CHARACTERISTICS

at 73°F ± 9°F (23°C ± 5°C)

Sensitivity (at 120 Hz) : 50 pC/g ± 5%
 Dynamic measuring range (random) : 0.01 g to 40 g peak
 Overload capacity (spikes) : Up to 100 g peak or 0.03 inch pk-pk (0.76 mm pk-pk), whichever is less
 Linearity : ±1% over dynamic measuring range
 Transverse sensitivity : <5% (20 to 300 Hz)
 Resonant frequency (mounted) : >5 kHz
 Frequency response (typical) : ± 5% between 5 and 3000 Hz (lower cut-off frequency is determined by electronics used)
 Temperature error : < 10% between -67°F and 850°F (-55°C and 455°C)
 Internal insulation resistance : Min. 10⁸ Ω pole-ground
 Min. 10⁹ Ω pole-pole

ENVIRONMENTAL

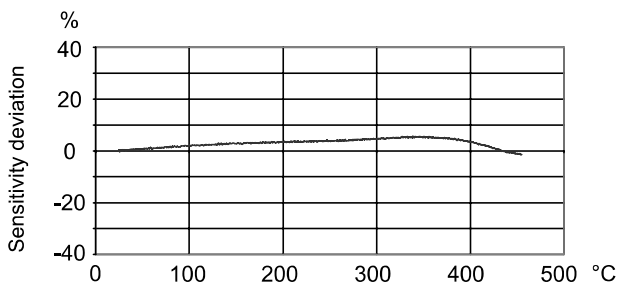
Temperature range
 • *Transducer and cable* : -65°F to 850°F (-54°C to 455°C)
 • *Connector* : -85°F to 446°F (-54°C to 230°C)
 Short term survival temperature : -65°F to 932°F (-54°C to 500°C) (transducer & cable)
 Shock acceleration : <1000 g peak (1 ms half sine wave) along sensitive axis
 Corrosion, humidity : Inconel 600, hermetically welded
 Base strain sensitivity : <10⁻⁴ g/με
 Mounting : 1/4" Allen screws with M4 spring lock washers, screw torque 4.5 Nm. No need for electrical insulation of mounting surface.

CALIBRATION

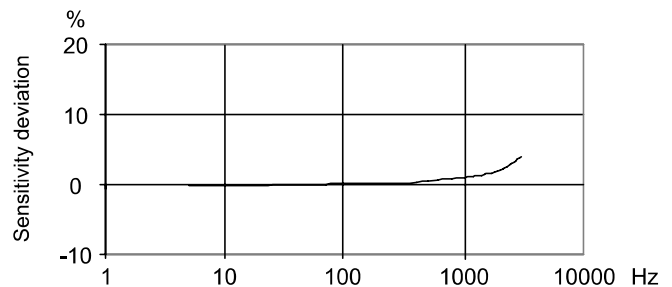
Dynamic calibration at factory at 5 g peak and 120 Hz (23°C). No subsequent calibration necessary.

RESPONSE CURVES

Typical temperature response



Typical frequency response

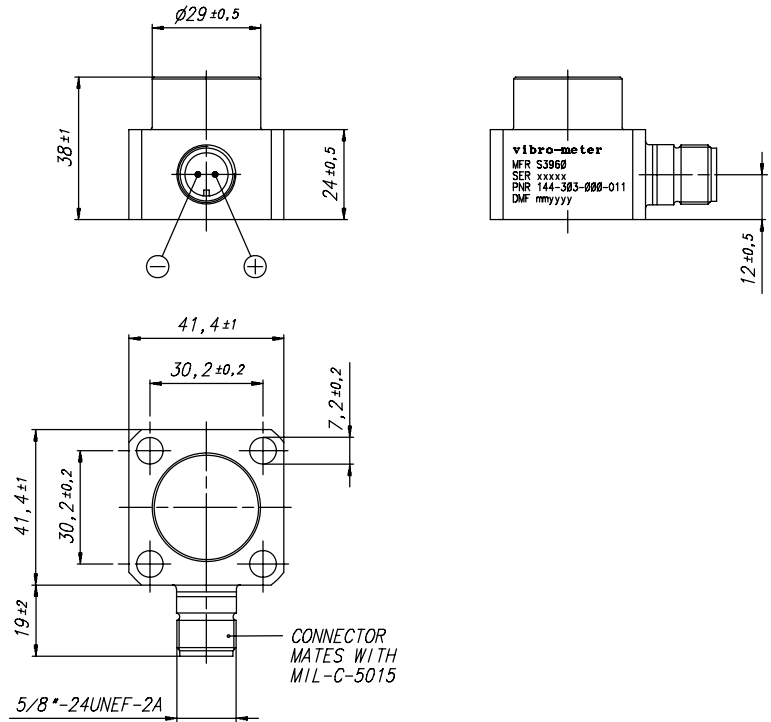


DIMENSIONS AND ORDERING INFORMATION

CA 303 Version 0XX

Vibro-Meter P/N	VM Corp. P/N
144-303-000-011	303-031

Cable assembly : EC 348

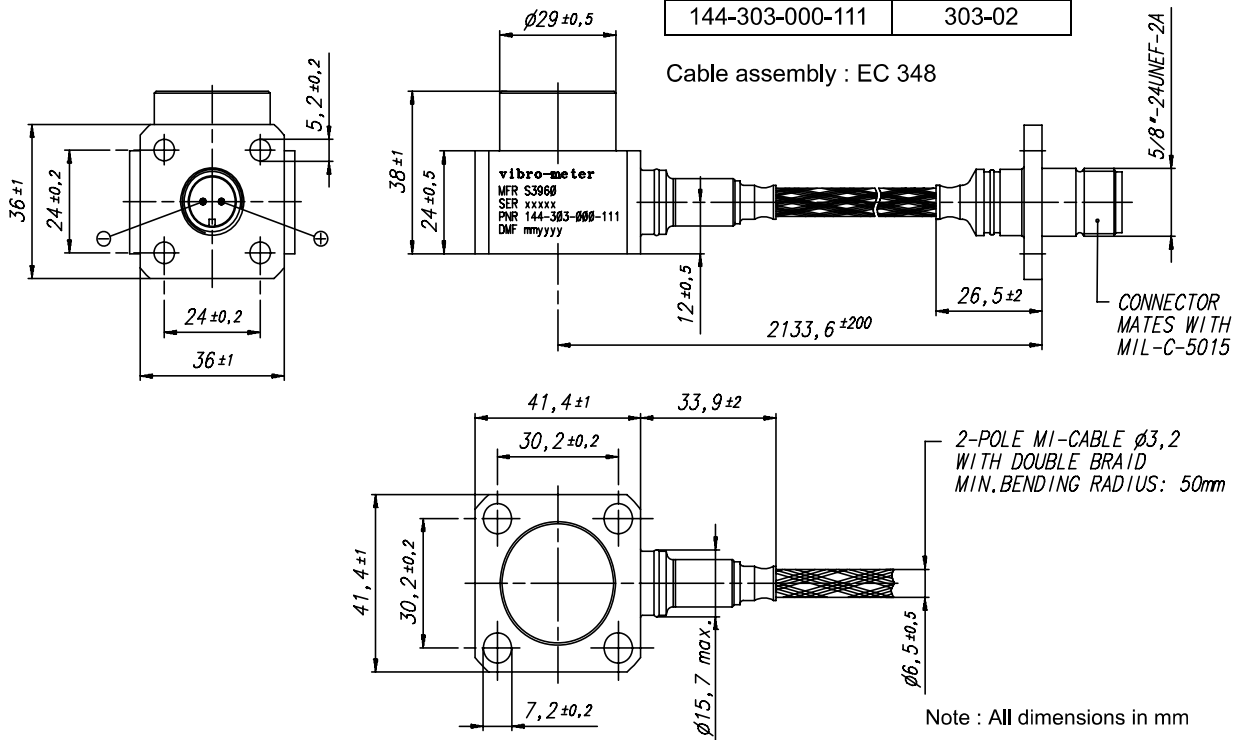


Note : All dimensions in mm

CA 303 Version 1XX

Vibro-Meter P/N	VM Corp. P/N
144-303-000-111	303-02

Cable assembly : EC 348



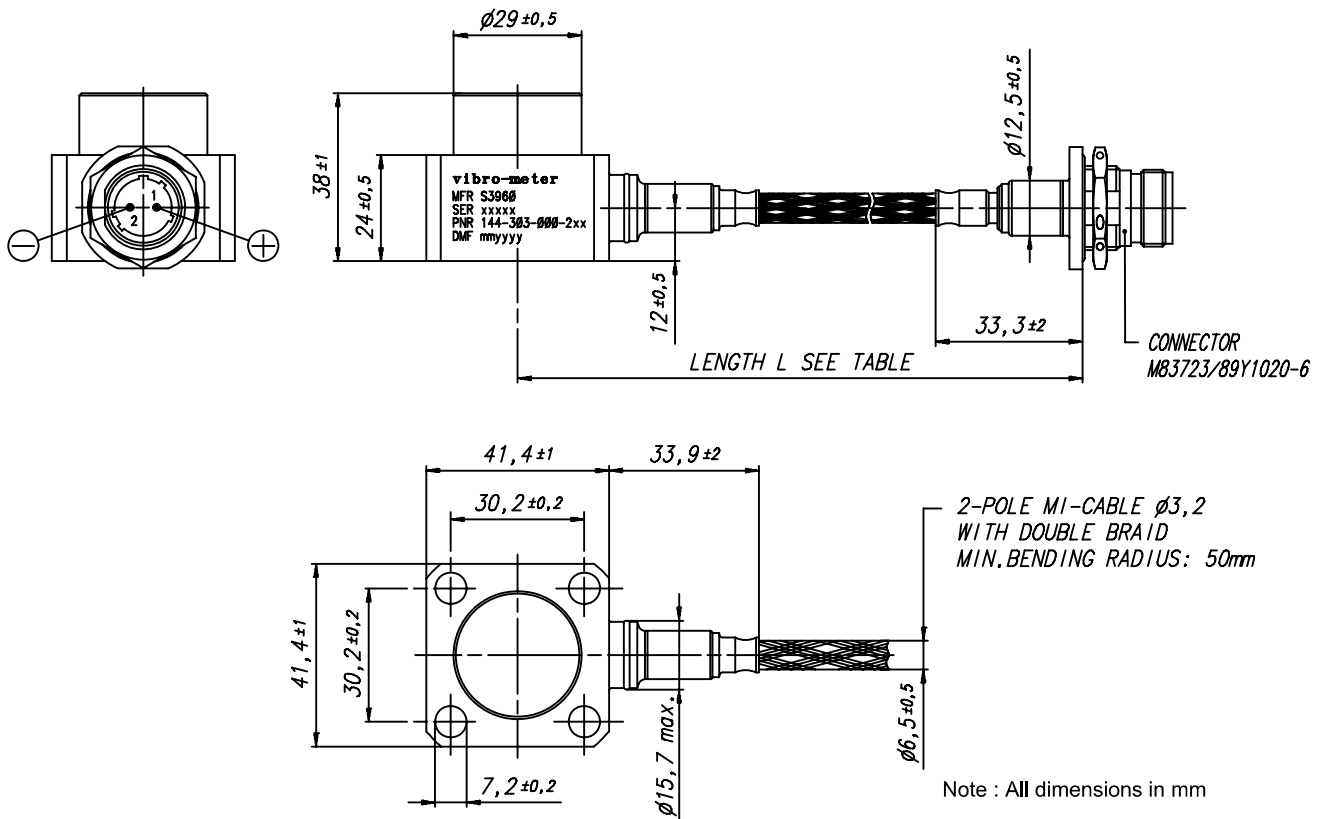
Note : All dimensions in mm

DIMENSIONS AND ORDERING INFORMATION (Continued)

CA 303 Version 2XX

Vibro-Meter P/N	VM Corp. P/N	Length L in inches	Length L in mm
144-303-000-211	Not applicable	40 ± 4	1016.0 ± 100
144-303-000-221	303-033	81 ± 8	2057.4 ± 200
144-303-000-231	Not applicable	45 ± 4	1143.0 ± 100
144-303-000-241	303-035	53 ± 4	1346.2 ± 100
144-303-000-251	303-039	50 ± 4	1270.0 ± 100
144-303-000-261	303-041	78 ± 4	1981.2 ± 100
144-303-000-271	303-037	104 ± 8	2641.6 ± 200
144-303-000-281	Not applicable	27 ± 4	685.8 ± 100
144-303-000-291	Not applicable	TBD	TBD

Cable assembly : EC 349

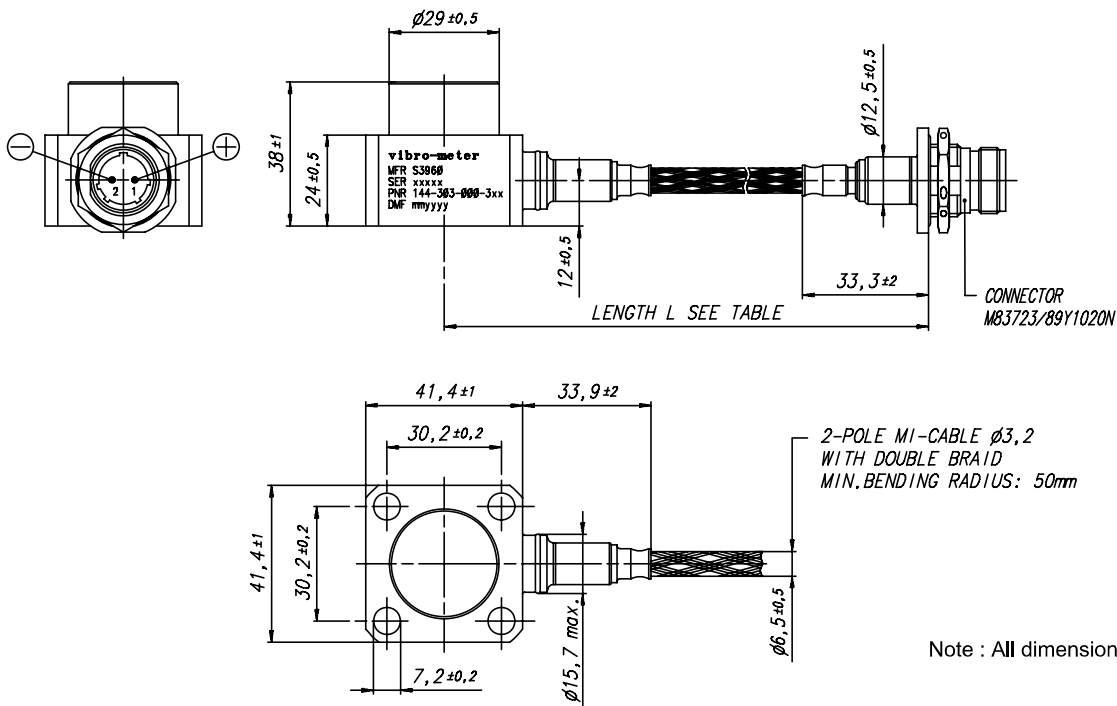


DIMENSIONS AND ORDERING INFORMATION (Continued)

CA 303 Version 3XX

Vibro-Meter P/N	VM Corp. P/N	Length L in inches	Length L in mm
144-303-000-311	303-032	48 ± 4	1219.2 ± 100
144-303-000-321	Not applicable	81 ± 8	2057.4 ± 200
144-303-000-331	303-034	45 ± 4	1143.0 ± 100
144-303-000-341	Not applicable	TBD	TBD
144-303-000-351	Not applicable	TBD	TBD
144-303-000-361	Not applicable	TBD	TBD
144-303-000-371	Not applicable	TBD	TBD
144-303-000-381	303-036	27 ± 4	685.8 ± 100
144-303-000-391	303-038	55 ± 4	1397.0 ± 100

Cable assembly : EC 350



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