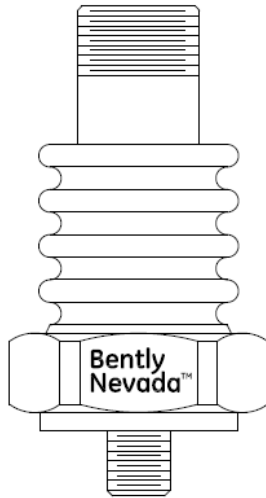


370300 Accelerometer Transducer

Product Datasheet

Bently Nevada* Asset Condition Monitoring



Description

Bently Nevada's 370300 accelerometers are designed to provide high electrical isolation between the base of the transducer and its internal electronics. This isolation offers greater protection against arcing/electrostatic discharge (ESD), as high as 6,000 volts. The transducer provides an amplitude range of 80 g peak and a sensitivity of 100 mV/g.

Caution

Most common machine malfunctions (imbalance, misalignment, etc.) originate at the rotor and cause an increase (or at least a change) in rotor vibration. For any housing measurement alone to be effective for overall machine protection, a significant amount of rotor vibration must be accurately transmitted to the bearing housing or machine casing, or more specifically, to the mounting location of the transducer.

In addition, care should be exercised in the physical installation of the transducer. Improper installation can result in a degradation of the transducer's performance, and/or the generation of signals which do not represent actual machine vibration. Integration of the output to velocity can increase degradation. Extreme caution should be exercised if integrating to velocity. For high quality velocity measurements, the 330500 Velomitor* sensor should be used.

Upon request, we can provide engineering services to determine the appropriateness of housing measurements for the machine in question and/or to provide installation assistance.



imagination at work

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Specifications

Parameters are specified from +20 to +30 °C (+68 to +86 °F) unless otherwise specified.

Note: Operation outside the specified limits may result in false readings or loss of machine monitoring.

Electrical

Sensitivity:

10.2 mV/m/s² (100 mV/g) ±5%,
25°C

Acceleration range:

80 g peak (784 m/sec²)

Amplitude non-linearity:

±1% to 784 m/sec² (80 g) peak.

Frequency response:

3 - 5kHz CPM) ±5%	(180 - 300,000
1 - 7k Hz ±10%	(60 - 420,000 CPM)
0.5 - 12kHz ±3dB	(30 - 720,000 CPM)

Resonance frequency:

25 kHz (1,500 kCPM)

Transverse sensitivity, max:

5% of axial

Temperature range:

-40 to +248° F (-40 to +120° C)

Dielectric withstand voltage between connector and surface:

6,000 VDC	1 min
5,000 VAC	1 min

Electrical noise:

Broadband 2. 5 Hz to 25 kHz

700 µg (6.9 × 10⁻³ m/sec²)

Spectral

10 Hz

10 µg/√Hz (9.8 × 10⁻⁵ m/sec²/√Hz)

100 Hz

5 µg/√Hz (4.9 × 10⁻⁵ m/sec²/√Hz)

1000 Hz

5 µg/√Hz (4.9 × 10⁻⁵ m/sec²/√Hz)

Output Impedance

100 Ω

Impedance, between connector and base:

DC

>100 Ω

100 Hz

>100 MΩ

1.0 kHz

>10 MΩ

10 kHz

>1 MΩ

Power Requirements:

Excitation Voltage

+24Vdc nominal
18 ~ 30 Vdc

Regulated Current Range

3mA nominal
2 ~ 10 mA

Output Bias Voltage

+12VDC nominal

Grounding

Case isolated, internally shielded

Compliance and Certifications

EMC

Standards:

EN 61326-2-1 Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications

EN 61326-2-3 Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning

European Community Directives:

EMC Directive 2004/108/EC

For the detailed listing of country and product specific approvals, refer to the **Approvals Quick Reference Guide**, document 108M1756, at www.GEmeasurement.com.

Environmental Limits

Operating and storage temperature:

-40°F to +248°F (-40°C to +120°C)

Temperature response:

-40° C -10%

+120° C +10%

Shock Survivability:

49,050 m/s² (5000 g) peak, maximum.

Shock limit, mounted:

2,000 g peak (19,600 m/sec² peak)

Relative humidity:

100% condensing, non-submerged. Case is hermetically sealed.

Electromagnetic sensitivity, equiv g, max:

70 µg/gauss (6.9 x 10⁻⁴ m/sec²/gauss)

Physical

Weight (no cable):

4.35 oz (122 g)

Diameter:

2.54 in (64.4 mm), including mounting stud.

Height:

2.3 in (59 mm), including mounting stud.

Connector:

2-pin MIL-5015 Receptacle

Mounting torque:

Integral mounting

¼ - 28 UNF

Mounting torque, recommended

30in-lb/3.4 N-m

Integral mounting

M8 x 1.25

Mounting torque, recommended

40in-lb/4.5 N-m

Integral mounting

M6 x 1.00

Mounting torque, recommended

30in-lb/3.4 N-m

Case material:

303 stainless steel

Mounting angle:

Any orientation

Sealing:

hermetic

Base strain sensitivity:

<0.0002 g/ μ strain (<1.9 x 10⁻³
m/sec²/ μ strain)

Sensing element design:

PZT, shear

Sensor case material:

stainless steel

Isolation material:

ceramic

Ordering Information

For the detailed listing of country and product specific approvals, refer to the **Approvals Quick Reference Guide**, document 108M1756, at www.GEmeasurement.com.

370300 Accelerometer

370300-AA-BB

A: Mounting Thread Option

- 01** M8 X 1.25
- 02** 1/4-28 UNF
- 03** M6 x 1.0

B: Agency Approval Option

- 00** None

Interconnect Cables

02173034

2- Conductor MIL-C-5015 shielded 0.382mm² (22AWG) cable. The cable has a splash-proof boot over a female connector at the transducer end and is flush cut at the monitor end. The temperature range of the cable is -55° to 125 °C (-67 ° to 257 °F). The cable is recommended for high electromagnetic noise environments and European Conformance (CE). The length of this cable is 32ft/10m.

Accessories

115M8763

370300 Accelerometer
Installation Manual.

Graphs and Figures

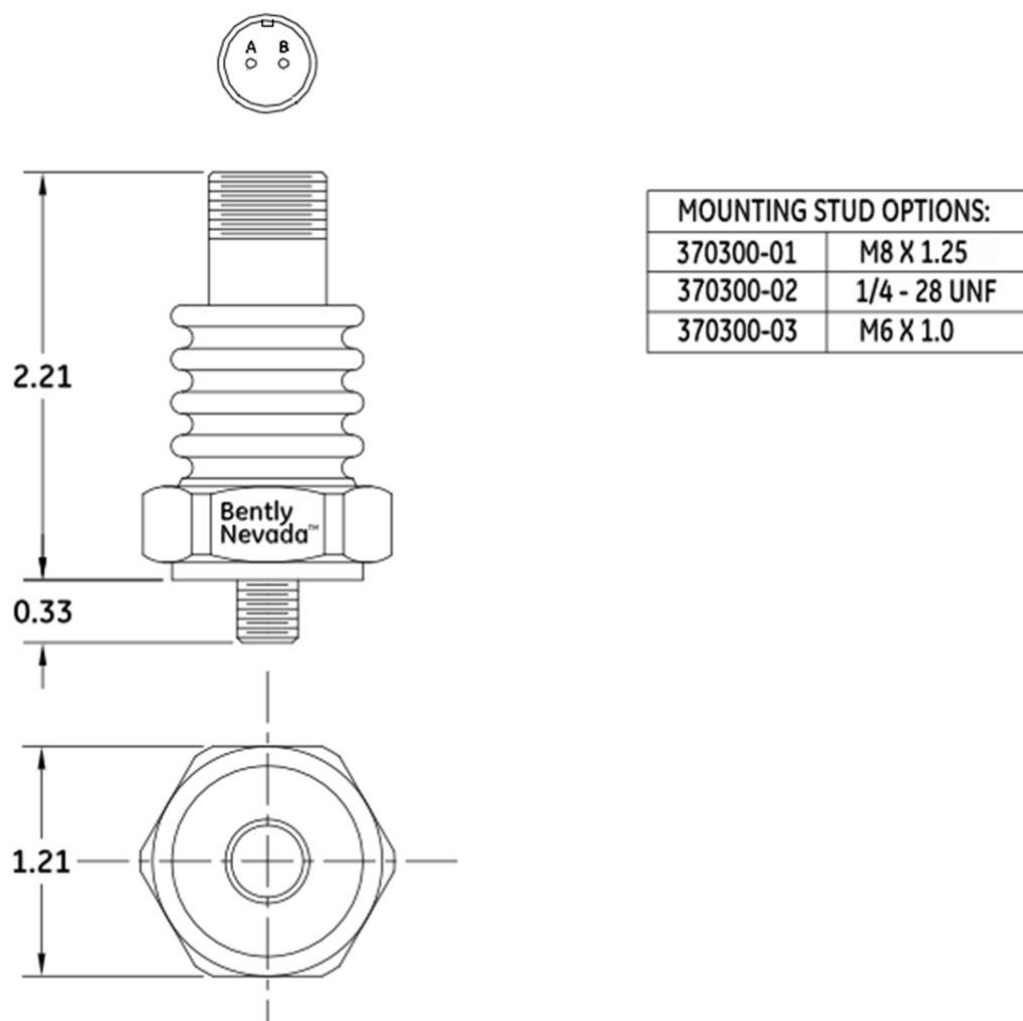


Figure 1: Acceleration Transducer dimensional drawing
Dimensions are in inches

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Printed in USA. Uncontrolled when transmitted electronically.

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