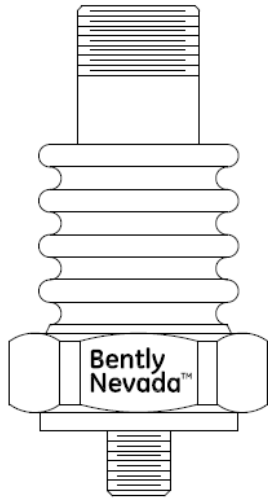


# 370300 Accelerometer Transducer

## Product Datasheet

Bently Nevada\* Asset Condition Monitoring

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### 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.

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### Electrical

#### Sensitivity:

10.2 mV/m/s<sup>2</sup> (100 mV/g) ±5%,  
25°C

#### Acceleration range:

80 g peak (784 m/sec<sup>2</sup>)

#### Amplitude non-linearity:

±1% to 784 m/sec<sup>2</sup> (80 g) peak.

#### Frequency response:

3 - 5kHz (180 - 300,000  
CPM) ±5%

1 - 7k Hz (60 - 420,000 CPM)  
±10%

0.5 - 12kHz (30 - 720,000 CPM)  
±3dB

#### 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<sup>-3</sup> m/sec<sup>2</sup>)

##### **Spectral**

**10 Hz**

10 µg/√Hz (9.8 × 10<sup>-5</sup> m/sec<sup>2</sup>/√Hz)

**100 Hz**

5 µg/√Hz (4.9 × 10<sup>-5</sup> m/sec<sup>2</sup>/√Hz)

**1000 Hz**

5 µg/√Hz (4.9 × 10<sup>-5</sup> m/sec<sup>2</sup>/√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

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## 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](http://www.GEmeasurement.com).

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## 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/s<sup>2</sup> (5000 g) peak, maximum.

### Shock limit, mounted:

2,000 g peak (19,600 m/sec<sup>2</sup> peak)

### Relative humidity:

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

### Electromagnetic sensitivity, equiv g, max:

70 µg/gauss (6.9 x 10<sup>-4</sup> m/sec<sup>2</sup>/gauss)

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## 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/ $\mu$ strain (<1.9 x 10<sup>-3</sup>  
m/sec<sup>2</sup>/ $\mu$ strain)

**Sensing element design:**

PZT, shear

**Sensor case material:**

stainless steel

**Isolation material:**

ceramic

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**Ordering Information**

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**370300 Accelerometer**

**370300-AA-BB**

**A: Mounting Thread Option**

- 01** M8 X 1.25
- 02** ¼-28 UNF
- 03** M6 x 1.0

**B: Agency Approval Option**

- 00** None

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**Interconnect Cables**

**02173034**

2- Conductor MIL-C-5015 shielded 0.382mm<sup>2</sup> (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.

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**Accessories**

**115M8763**

370300 Accelerometer  
Installation Manual.

## Graphs and Figures

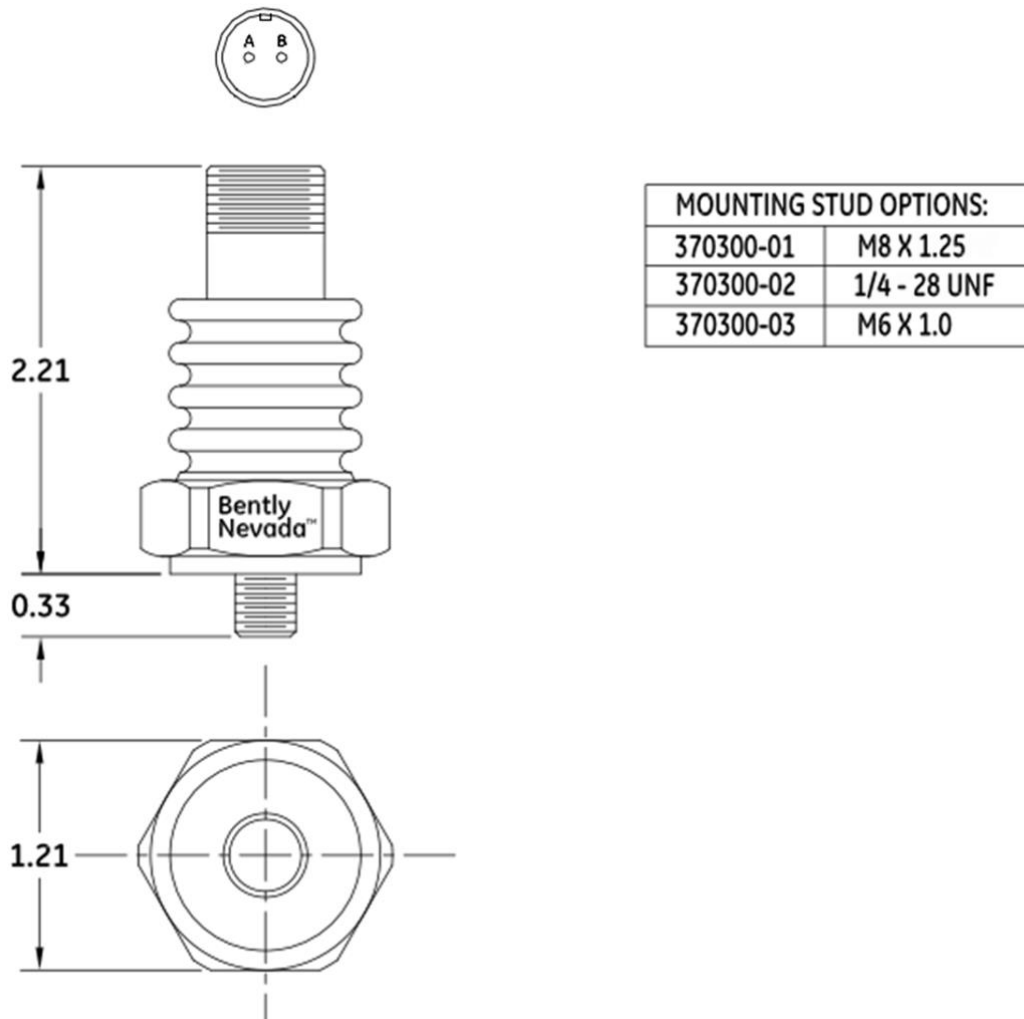


Figure 1: Acceleration Transducer dimensional drawing  
Dimensions are in inches

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1631 Bently Parkway South, Minden, Nevada USA 89423

Phone: 1-775.782.3611 Fax: 1-775.215.2873

[www.GEmeasurement.com](http://www.GEmeasurement.com)