

# Bently Nevada 330400&330425&330500 Series Service Manual

330500-03-01

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## 1. Description

Manufacturer : Bently Nevada

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## 3. Product Information



Manufacturer : Bently Nevada

Product No. : 330500-03-01

Product Type : Velomitor Piezo-velocity Sensor

Made in U.S.A

Model : 330500 - Velomitor Piezo-velocity Sensor

Mounting Thread Option : -03 1/4 - 28 UNF

Agency Approval Option : -01 CSA/US/C

Parameters are specified from +20 °C to +30 °C  
(+68 °F to +86 °F) and at 100 Hz unless otherwise  
indicated.

Operating the transducer outside the  
specified limits may result in false  
readings or loss of machine  
monitoring.

Electrical

Sensitivity

3.94mV/mm/s (100 mV/in/s)

±5%.

Frequency

Response

4.5 Hz to 5 kHz (270 cpm to  
300 kcpm) ±3.0 dB.

6.0 Hz to 2.5 kHz (360 cpm to  
150 kcpm) ±0.9 dB.

Temperature

Sensitivity

-14% to +7.5% typical over the  
operating temperature  
range.

Velocity Range 1270 mm/s (50 in/s) peak.

Transverse

Sensitivity

Less than 5% of sensitivity.

Amplitude

Linearity

±2% to 152 mm/s (6 in/s)  
peak.

Mounted

Resonant

Frequency

Greater than 12 kHz.

Output Bias

Voltage

-12 ±3.0 VDC, over  
temperature referenced to  
Pin A.

Dynamic

Output

Impedance

Less than 2400 Ω

Broadband

Noise Floor (4.5

Hz to 5 kHz)

0.004 mm/s (160 µin/s) rms,  
nominal

Grounding Case isolated

Maximum

Cable Length

305 metres (1,000 feet) of



cable, part number 02173006,  
with no degradation of  
signal.

#### Environmental Limits

##### Operating

##### Temperature

##### Range

-55°C to 121°C

(-67°F to 250°F)

##### Shock

##### Survivability

5,000 g peak, maximum

##### Relative

##### Humidity

To 100% non-submerged;

case is hermetically-sealed.

##### Base Strain

##### Sensitivity

0.005 in/s/mstrain.

##### Magnetic Field

##### Susceptibility

<51 min/s/gauss (50 gauss,

50-60Hz).

##### Physical

Weight 142 grams (5.0 oz), typical.

Diameter 25.3 mm (0.995 in).

Height 63.2 mm (2.49 in).

Case Material 316L stainless steel.

##### Connector

2-pin Mil-C-5015

hermetically-sealed, 316L

stainless steel shell.

##### Mounting

##### Torque

32-46 kg cm (24-40 in-lb)

max.

##### Polarity

When the sensor case

motion is toward the

connector, Pin A becomes

positive with respect to pin B.

##### Recommended

cable length

(assuming

max vibration

of 50g,

frequency 10

kHz, and cable

capacitance

200 pF/m.)

208 ft (63m)

##### Compliance and

##### Certifications

##### FCC

This device complies with part 15 of the

FCC Rules. Operation is subject to the

following two conditions:

I This device may not cause harmful

interference.



I This device must accept any interference received, including interference that may cause undesired operation.

EMC

EMC Directive 2014/30/EU

RoHS

RoHS Directive 2011/65/EU

Maritime

DNV rules for classification - Ships

DNV rules for classification - High speed and light craft

DNV offshore standards

Hazardous Area Approvals

330500 Ex ia IIC T4

AEx ia IIC T4

Class I, Division 1, Groups A, B, C and D

Class II, Groups E, F, G

Class III

Install per dwg 167537

T4 @  $-40^{\circ}\text{C} \leq T_a \leq 100^{\circ}\text{C}$

Ex nL IIC T4

AEx nA IIC T4

Class I, Div 2, Groups A, B, C, D

Install per dwg 167537

T4 @  $-40^{\circ}\text{C} \leq T_a \leq 100^{\circ}\text{C}$

