Bently Nevada 330400&330425&330500 Series Service Manual

330500-03-04

1. Description

Manufacturer : Bently Nevada

3. Product Information

Manufacturer : Bently Nevada

Product No. : 330500-03-04

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 : -04 Multiple approvals (CSA, ATEX)

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°C ≤ Ta ≤ 100°C

Ex nL IIC T4

AEx nA IIC T4

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

Install per dwg 167537

T4 @ -40°C ≤ Ta ≤ 100°C