

# Bently Nevada 330903&330904&330905&330910 Series Service Manual

330903-00-05-50-12-05

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## 1. Description

Part Number:330903-00-05-50-12-05

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## 3. Product Information



Part Number:330903-00-05-50-12-05

Model: 3300 NSv Proximity Probes

Manufacturer: Bently Nevada

Condition: New & Original in Factory Packing

Factory Warranty: 12 Months

Ordering Information

Model: 330903 - 3300 NSv Probe, M8X1 thread, without armor

Unthreaded Length Option: -00- 00 mm

Overall Case Length Option: -05-50 mm

Total Length Option: 50 5.0 meters (16.4 feet)

Connector and Cable Type Option:12 Miniature coaxial ClickLoc connector,  
FluidLoc cable

Agency Approval Option: 05 Multiple Approvals

Probe dc Resistance

Probe Length

(m) 5.0

Resistance from the Center

Conductor to the Outer

Conductor (RPROBE)

(ohms)

5.3 ± 0.7

The 3300 NSv probe and extension cable are mechanically and electrically compatible and interchangeable with Bently Nevada's previous 3300 RAM proximity probe and extension cable.

The NSv probe has increased chemical resistance compared to the 3300 RAM probe, which allows its use in many process compressor applications. The side-view characteristics of the 3300 NSv probe are also superior to those of the 3000-series 190 probe when gapping the 3300 NSv probe at the same distance from the probe target.

Extension cable

dc resistance

Center conductor: 0.220

Ω/m (0.067 Ω/ft)

Shield: 0.066 Ω/m (0.020

Ω/ft)

Extension cable

capacitance

69.9 pF/m (21.3 pF/ft)

typical

Field Wiring

0.2 to 1.5 mm<sup>2</sup> (16 to 24

AWG)[0.25 to 0.75 mm<sup>2</sup> (18

to 23 AWG) with ferrules].

Recommend using threeconductor shielded triad  
cable. Maximum length of

305 meters (1,000 feet)

between the 3300 XL NSv

Proximity Sensor and the

monitor. See the frequency

response graphs Figure 16

and Figure 17 for signal

rolloff at high frequencies

when using longer field

wiring lengths.

Linear Range



1.5 mm (60 mils). Linear range begins at approximately 0.25 mm (10 mils) from target and is from 0.25 to 1.75 mm (10 to 70 mils) (approximately -1 to -13 Vdc).

#### Recommended

Gap Setting 1.0 mm (40 mils)

Incremental

Scale Factor

(ISF)

7.87 V/mm (200 mV/mil)

+12.5%/-20% including

interchangeability error

when measured in

increments of 0.25 mm (10

mils) over the 1.5 mm (60

mil) linear range.

Deviation from

best fit straight

line (DSL)

Less than  $\pm 0.06$  mm ( $\pm 2.3$

mils).

Frequency

Response

0 to 10 kHz: +0, -3 dB

typical, with up to 305

meters (1000 feet) of field

wiring.

Target Size (flat

target)

Minimum: 8.9 mm (0.35 in)

diameter

Recommended minimum:

13 mm (0.5 in) diameter

Axial position

measurements on shaft

diameters smaller than 13

mm (0.5 in) will generally

result in a change in scale

factor. Reducing the gap

between the probe and

target will help limit the

change in scale factor. See

Figure 12 for additional

information.

Probe Tip

Material Polyphenylene sulfide (PPS).

Probe Case

Material AISI 304 stainless steel (SST).

Probe Cable

Specifications

75  $\Omega$  coaxial, fluoroethylene

propylene (FEP) insulated

probe cable in the following

total probe lengths: 0.5, 1, 5,

or 7 meters.

Recommended



torque Finger tight

Maximum torque 0.56 N•m (5 in•lb)

Minimum Bend

Radius (with or without sst armor)

25.4 mm (1.0 in)

Operating Temperature

-52°C to +177°C (-62°F to +351°F)

Storage Temperature

-52°C to +177°C (-62°F to +351°F)

Probe Pressure

3300 NSv probes are designed to seal differential pressure between the probe tip and case. The probe sealing material consists of a Viton O-ring. Probes are not pressure tested prior to shipment. Contact our custom design department if you require a test of the pressure seal for your application.

Connector-to-connector Torque

Probe Case Torque

Maximum Rated Recommended

1/4-28 or M8X1 probe cases

7.3 N•m (65 in•lb)

5.1 N•m (45 in•lb)

Probe Case Thread

Maximum Length of Thread Engagement

M8x1 12 mm

