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

330905-00-03-10-01-05

1. Description

Part Number:330905-00-03-10-01-05

3. Product Information

Part Number:330905-00-03-10-01-05
Model: 3300 NSv Proximity Probes
Manufacturer: Bently Nevada
Condition: New & Original in Factory Packing
Factory Warranty: 12 Months
Ordering Information
Model: 330905 - 3300 NSv Probe, M10X1 thread, without armor
Unthreaded Length Option: -00- 00 mm
Overall Case Length Option: -03-30 mm
Total Length Option: 10 1.0 meter (39 in)
Connector and Cable Type Option: 01
Miniature coaxial ClickLoc connector
with connector protector, standard
cable
Agency Approval Option: -05 Multiple Approvals
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.
Probe dc Resistance
Probe Length
(m)
Resistance from the Center
Conductor to the Outer
Conductor (RPROBE)
(ohms)
1.0 4.2 ± 0.5
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 mm2 (16 to 24
AWG)[0.25 to 0.75 mm2 (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
Proximitor 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 ±0.06 mm (±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 Ω 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

M10X1 probe
cases – first
three
threads
22.6 N•m
(200 in•lb)
7.5 N•m
(66 in•lb)

Probe
Case
Thread
Maximum Length of Thread
Engagement
M10x1 15 mm