

# Bently Nevada 330101 Series Service Manual

330101-00-34-15-02-05

---

## 1. Description

Manufacturer : Bently Nevada

---

## 3. Product Information



Manufacturer : Bently Nevada

Product No. :330101-00-34-15-02-05

Product Type : 3300 XL 8 mm Probe, 3/8-24 UNF thread,  
without armor

Made in U.S.A

330101 - 3300 XL 8 mm Probe, 3/8-24 UNF thread, without armor

Unthreaded Length Option :00 = 0.0 in

Overall Case Length Option :34 = 3.4 in

Total Length Option : 15 = 1.5 meter (4.9 feet)

Connector and Cable-Type Option :02 = Miniature coaxial ClickLoc  
connector, standard cable

Agency Approval Option

05 = CSA, ATEX, IECEx Approvals

The 3300 XL probe and extension cable also reflect improvements over previous designs. A patented TipLoc molding method provides a more robust bond between the probe tip and the probe body. The probe's cable incorporates a patented CableLoc design that provides 330 N (75 lbf) pull strength to more securely attach the probe cable and probe tip.

You can also order 3300 XL 8 mm probes and extension cables with an optional FluidLoc cable option. This option prevents oil and other liquids from leaking out of the machine through the cable's interior.

8 mm probes provide a thicker encapsulation of the probe coil in the molded PPS plastic probe tip. This results in a more rugged probe. The larger diameter of the probe body also provides a stronger, more robust case. We recommend that you use 8 mm probes when possible to provide optimal robustness against physical abuse

Nominal Probe DC Resistance  
Resistance (RPROBE) from Center Conductor  
to Outer Conductor

Probe

Length (m) 1.5

RPROBE(Q)

7.73 ± 0.50

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). Recommend using

3 conductor shielded triad

cable and tinned field

wiring. Maximum length of

305 meters (1,000 feet)

between the 3300 XL

Proximito Sensor and the

monitor. See the frequency



response graphs, Figures  
10 and 12, for signal rolloff  
at high frequencies when  
using longer field wiring  
lengths.

#### Linear Range

2 mm (80 mils). Linear  
range begins at  
approximately 0.25 mm (10  
mils) from target and is  
from 0.25 to 2.3 mm (10 to  
90 mils) (approximately -1  
to -17 Vdc).

#### Recommended

##### Gap Setting for

##### Radial Vibration

-9 Vdc [approximately 1.27  
mm (50 mils)]

##### Incremental Scale Factor (ISF)

Standard 5 or 1

##### meter System

7.87 V/mm (200 mV/mil)  $\pm$   
5% including

interchangeability error

when measured in

increments of 0.25 mm (10

mils) over the 80 mil linear

range from 0°C to +45°C

(+32°F to +113°F).

##### Standard 9

##### meter System

7.87 V/mm (200 mV/mil)

$\pm$  6.5% including

interchangeability error

when measured in

increments of 0.25 mm (10

mils) over the 80 mil linear

range from 0°C to +45°C

(+32°F to +113°F).

##### Extended

##### Temperature

Range (ETR) for 5

and 9 Meter

##### Systems

7.87 V/mm (200 mV/mil)  $\pm$

6.5% including

interchangeability error

when measured in

increments of 0.25 mm (10

mils) over the 80 mil linear

range from 0°C to +45°C

(+32°F to +113°F).

##### Deviation from best fit straight line (DSL)

Standard 5 or 1

##### meter System

Less than  $\pm 0.025$  mm ( $\pm 1$

mil) with components at

0°C to +45°C (+32°F to

+113°F).



## Standard 9

### meter System

Less than  $\pm 0.038$  mm ( $\pm 1.5$  mil) with components at  $0^{\circ}\text{C}$  to  $+45^{\circ}\text{C}$  ( $+32^{\circ}\text{F}$  to  $+113^{\circ}\text{F}$ ).

### Extended

#### Temperature

#### Range 5 and 9

### meter Systems

Less than  $\pm 0.038$  mm ( $\pm 1.5$  mil) with components at  $0^{\circ}\text{C}$  to  $+45^{\circ}\text{C}$  ( $+32^{\circ}\text{F}$  to  $+113^{\circ}\text{F}$ ).

### Probe Tip

Material Polyphenylene sulfide (PPS).

### Probe Case

#### Material

AISI 303 or 304 stainless steel (SST).

323 g/m (11.4 oz)

### Probe Temperature Range

#### Operating and Storage Temperature

#### Standard

#### Probe

$-52^{\circ}\text{C}$  to  $+177^{\circ}\text{C}$  ( $-62^{\circ}\text{F}$  to  $+350^{\circ}\text{F}$ )

#### Extended

#### Temperature

#### Range Probe

$-52^{\circ}\text{C}$  to  $+218^{\circ}\text{C}$  ( $-62^{\circ}\text{F}$  to  $+425^{\circ}\text{F}$ ) for the probe tip;  $-51^{\circ}\text{C}$  to  $+260^{\circ}\text{C}$  ( $-60^{\circ}\text{F}$  to  $+500^{\circ}\text{F}$ ) for the probe cable and connector.

Exposing the probe to temperatures below  $-34^{\circ}\text{C}$  ( $-30^{\circ}\text{F}$ ) may cause premature failure of the pressure seal.

### Probe Pressure

3300 XL 8 mm 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.

### Probe Relative Humidity

Less than a 3% change in Average Scale Factor (ASF) when tested in 93% humidity in accordance with IEC standard 68 2 3 for up to 56 days.

### Thread Engagement Limits

#### Probe Case Thread 3/8-24

#### Maximum Length of Thread Engagement

0.563 in

### Probe Case Torque

#### Probe Type Standardforward mounted probes

Maximum Rated 33.9 N•m (300 in•lbf)



Recommended 11.2 N•m (100 in•lbf)

Probe Case Torque

Probe Type Standard forward mount probes - first three threads

Maximum Rated 22.6 N•m (200 in•lbf)

Recommended 7.5 N•m (66 in•lbf)

Temperature Schedule

(Probe Only)

For EPL Ga and Gc

Temperature Classification T1 Ambient Temperature -55°C to +232°C

Temperature Classification T2 Ambient Temperature -55°C to +177°C

Temperature Classification T3 Ambient Temperature -55°C to +120°C

Temperature Classification T4 Ambient Temperature -55°C to +80°C

Temperature Classification T5 Ambient Temperature -55°C to +40°C

For EPL Dc

Temperature Classification T280°C @ Ta Ambient Temperature -55°C to +232°C

Temperature Classification T225°C @ Ta Ambient Temperature -55°C to +177°C

Temperature Classification T170°C @ Ta Ambient Temperature -55°C to +120°C

Temperature Classification T130°C @ Ta Ambient Temperature -55°C to +80°C

Temperature Classification T105°C @ Ta Ambient Temperature -55°C to +100°C

Temperature Classification T90°C @ Ta Ambient Temperature -55°C to +40°C

