

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official Bently Nevada product data

BENTLY NEVADA 3300 XL 8 MM

102044-00-18-10-02-00

LEGACY PROXIMITY PROBE

Selected official system, specifications, ordering and dimensional pages follow.

3300 XL 8 mm Proximity Transducer System

Datasheet

Cordant™

141194 Rev. AM



Description

The 3300 XL 8 mm Proximity Transducer System consists of:

- One 3300 XL 8 mm probe,
- One 3300 XL extension cable¹, and
- One 3300 XL Proximitor Sensor².

The system provides an output voltage that is directly proportional to the distance between the probe tip and the observed conductive surface and can measure both static (position) and dynamic (vibration) values. The system's primary applications are vibration and position measurements on fluid-film bearing machines, as well as Keyphasor reference and speed measurements³.

The 3300 XL 8 mm system delivers the most advanced performance in our eddy current proximity transducer systems. The standard 3300 XL 8 mm 5-meter system also fully complies with the American Petroleum Institute's (API) 670 Standard for mechanical configuration, linear range, accuracy, and temperature stability. All 3300 XL 8 mm proximity transducer systems provide this level of performance and support complete interchangeability of probes, extension cables, and Proximitor sensors, eliminating the need to match or bench calibrate individual components.

Each 3300 XL 8 mm Transducer System component is backward compatible and interchangeable⁴ with other non-XL 3300 series 5 mm and 8 mm transducer system components⁵. This compatibility includes the 3300 5 mm probe, for applications in which an 8 mm probe is too large for the available mounting space^{6,7}.



Baker Hughes

Specifications

Unless otherwise noted, the following specifications are for a 3300 XL 8 mm Proximity Sensor, extension cable and 8 mm probe between +18°C and +27°C (+64°F to +80°F) at a maximum altitude of 2000 meters, with a -24 Vdc power supply, a 10 k Ω load, an AISI 4140 steel target, and a probe gapped at 1.27 mm (50 mils). Performance characteristics apply to systems that consist solely of 3300 XL 8 mm components. The system accuracy and interchangeability specifications do not apply to transducer systems that are calibrated to any target other than our AISI 4140 steel target.

Electrical

Proximity Sensor Input	Accepts one non-contacting 3300-series 5 mm, 3300 XL 8 mm Proximity Probe and Extension Cable.
Power	Requires -17.5 Vdc to -26 Vdc when installed with non-incendive circuit connected per installation drawing 140979 at 12 mA maximum consumption, -23 Vdc to -26 Vdc with barriers. Operation at a more positive voltage than -23.5 Vdc can result in reduced linear range.
Supply Sensitivity	Less than 2 mV change in output voltage per volt change in input voltage.
Output Resistance	50 Ω

Nominal Probe DC Resistance

Resistance (R_{PROBE}) from Center Conductor to Outer Conductor

Probe Length (m)	R_{PROBE} (Ω)
0.5	7.45 $\pm$ 0.50
1.0	7.59 $\pm$ 0.50
1.5	7.73 $\pm$ 0.50
2.0	7.88 $\pm$ 0.50
3.0	8.17 $\pm$ 0.50
5.0	8.73 $\pm$ 0.50
9.0	9.87 $\pm$ 0.50

Nominal Extension Cable DC Resistance

Resistance (R_{CORE}) from Center Conductor to Center Conductor

Length of Extension Cable (m)	R_{CORE} (Ω)
3.0	0.66 $\pm$ 0.10
3.5	0.77 $\pm$ 0.12
4.0	0.88 $\pm$ 0.13
4.5	0.99 $\pm$ 0.15
6.0	1.32 $\pm$ 0.21
7.0	1.54 $\pm$ 0.23
7.5	1.65 $\pm$ 0.25
8.0	1.76 $\pm$ 0.26
8.5	1.87 $\pm$ 0.28

Ordering Information



For the detailed listing of country and product-specific approvals, refer to the [Approvals Quick Reference Guide \(108M1756\)](#).

For additional technical documentation, please log in to bntechsupport.com and access the Bently Nevada Media Library.

Ordering Information for Probes

3300 XL 8 mm Proximity Probes:

330101 3300 XL 8 mm Probe, 3/8-24 UNF thread, without armor(2)

330102 3300 XL 8 mm Probe, 3/8-24 UNF thread, with armor(2)

Part Number-AA-BB-CC-DD-EE

A: Unthreaded Length Option



Unthreaded length must be at least 0.8 in. less than the case length.

Order in increments of 0.1 in.

Length configurations:

Maximum unthreaded length: 8.8 in.

Minimum unthreaded length: 0.0 in.

Example: **0 4** = 0.4 in.

B: Overall Case Length Option

Order in increments of 0.1 in.

Standard thread configurations:

Maximum case length: 9.6 in.

Minimum case length: 0.8 in.

Example: **2 4** = 2.4 in.

C: Total Length Option

05	0.5 meter (1.6 feet)
10	1.0 meter (3.3 feet)
15	1.5 meter (4.9 feet)

20	2.0 meters (6.6 feet)
30	3.0 meters (9.8 feet)
50	5.0 meters (16.4 feet)
90	9.0 meters (29.5 feet)



3-meter length option is only available on 330101 probes, and is designed for use with the 9 meter Proximitor sensor only.



5-meter probes are designed for use with the 5 meter Proximitor sensor only.

D: Connector and Cable-Type Option

01	Miniature coaxial ClickLoc connector with connector protector, standard cable
02	Miniature coaxial ClickLoc connector, standard cable
11	Miniature coaxial ClickLoc connector with connector protector, FluidLoc cable
12	Miniature coaxial ClickLoc connector, FluidLoc cable

E: Agency Approval Option

00	Not required
05	CSA, ATEX, IECEx Approvals

3300 XL 8 mm Proximity Probes, Metric:

330103 3300 XL 8 mm Probe, M10 x 1 thread, without armor (2)

330104 3300 XL 8 mm Probe, M10 x 1 thread, with armor (2)

Part Number-AA-BB-CC-DD-EE

A: Unthreaded Length Option



Unthreaded length must be at least 20 mm less than the case length.

Order in increments of 10 mm

Length configurations:

Maximum unthreaded length: 230 mm

Minimum unthreaded length: 0 mm

Example: **0 6** = 60 mm

B: Overall Case Length Option

Order in increments of 10 mm

Metric thread configurations:

Maximum case length: 250 mm

Minimum case length: 20 mm

Example: **0 6** = 60 mm

C: Total Length Option

05	0.5 meter (1.6 feet)
10	1.0 meter (3.3 feet)
15	1.5 meter (4.9 feet)
20	2.0 meters (6.6 feet)
50	5.0 meters (16.4 feet)
90	9.0 meters (29.5 feet)



5-meter probes are designed for use with the 5 meter Proximitor sensor only.

D: Connector and Cable-Type Option

01	Miniature coaxial ClickLoc connector with connector protector, standard cable
02	Miniature coaxial ClickLoc connector, standard cable
11	Miniature coaxial ClickLoc connector with connector protector, FluidLoc cable
12	Miniature coaxial ClickLoc connector, FluidLoc cable

E: Agency Approval Option

00	Not required
05	CSA, ATEX, IECEx Approvals

3300 XL 8 mm Reverse Mount Probes

330105-02-12-CC-DD-EE3/8-24 UNF threads(2)

330106-05-30-CC-DD-EE M10 x 1 threads(2)

Option Descriptions

C: Total Length Option

05	0.5 meter (1.6 feet)
10	1.0 meter (3.3 feet)
15	1.5 meter (4.9 feet)
20	2.0 meters (6.6 feet)
50	5.0 meters (16.4 feet)
90	9.0 meters (29.5 feet)



5-meter probes are designed for use with the 5 meter Proximitor sensor only.

D: Connector and Cable-Type Option

02	Miniature ClickLoc coaxial connector
12	Miniature ClickLoc coaxial connector, FluidLoc cable



The FluidLoc cable option -12 is not necessary on the vast majority of 330105 and 330106 installations due to the presence of the probe sleeve. Consider carefully the application before ordering the FluidLoc cable option for these probes.

E: Agency Approval Option

00	Not required
05	CSA, ATEX, IECEx Approvals

D: Agency Approval Option

00	Not required
05	CSA, ATEX, IECEx Approvals

3300 XL 8 mm Extended Temperature Range (ETR) Proximity Probes, Metric:

330193 3300 XL 8 mm Probe, M10 x 1 thread, without armor

330194 3300 XL 8 mm Probe, M10 x 1 thread, with armor

Part Number-AA-BB-CC-DD

A: Unthreaded Length Option



Unthreaded length must be at least 20 mm less than the case length.

Order in increments of 10 mm

Length configurations:

Maximum unthreaded length: 230 mm

Minimum unthreaded length: 0 mm

Example: 0 6 = 60 mm

B: Overall Case Length Option

Order in increments of 10 mm

Metric thread configurations:

Maximum case length: 250 mm

Minimum case length: 20 mm

Example: 0 6 = 60 mm

C: Total Length Option

05	0.5 meter (1.6 feet)
10	1.0 meter (3.3 feet)
15	1.5 meter (4.9 feet)
20	2.0 meters (6.6 feet)
50	5.0 meters (16.4 feet)
90	9.0 meters (29.5 feet)



5-meter probes are designed for use with the 5 meter Proximity sensor only.

D: Agency Approval Option

00	Not required
05	CSA, ATEX, IECEx Approvals

3300 XL 8 mm Extended Temperature Range (ETR) Reverse Mount Probes

330195-02-12-CC-DD 3/8-24 UNF threads

330196-05-30-CC-DD M10 x 1 threads

C: Total Length Option

05	0.5 meter (1.6 feet)
10	1.0 meter (3.3 feet)
15	1.5 meter (4.9 feet)
20	2.0 meters (6.6 feet)
50	5.0 meters (16.4 feet)
90	9.0 meters (29.5 feet)



5-meter probes are designed for use with the 5 meter Proximity sensor only.

D: Agency Approval Option

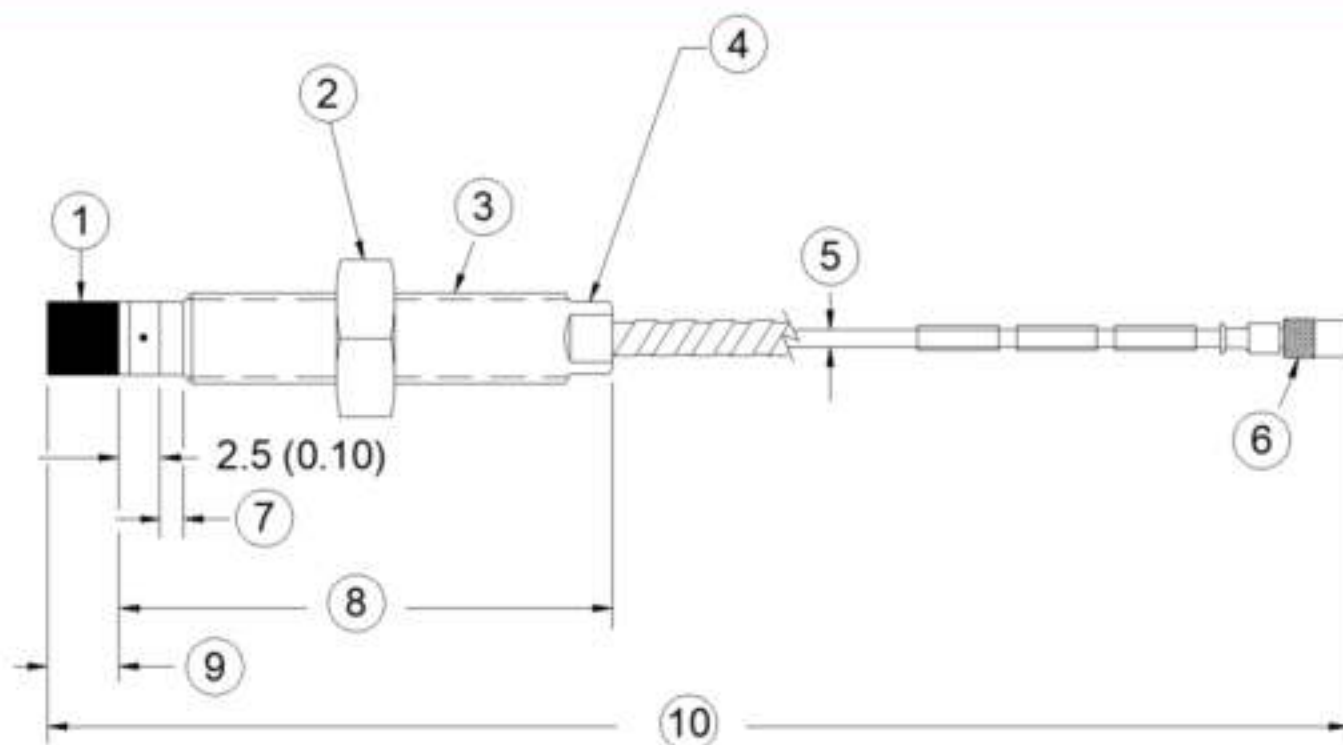
00	Not required
05	CSA, ATEX, IECEx approvals

3300 XL 8 mm Extended Temperature Range (ETR) Proximity Probes, Smooth Case:

330197 3300 XL 8 mm Probe without armor

330198 3300 XL 8 mm Probe with armor

Part Number-AA-BB-CC



1. Probe tip, 8.0 mm (0.31 in) diameter
2. 9/16 in for 3/8-24 threads, M17 for M10 threads (see Note 2)
3. Case thread
4. 5/16 in wrench flats for 3/8-24 threads; 8mm wrench flats for M10 threads.
5. 75 Ω cable, 3.68 mm (0.145 in) maximum outside diameter, 3.94 mm (0.155 in) maximum outside diameter for FluidLoc cable, 7.67 mm (0.302 in) outside diameter of armor, 9.5 mm (0.38 in) maximum diameter of armor ferrule
6. Miniature male coaxial connector, 7.24 mm (0.285 in) maximum outside diameter "D"
7. Unthreaded length "A"
8. Case length "B"
9. 6.0 mm (0.235 in) maximum
10. Total length "C", +30%, -0%³

Figure 14: 3300 XL 8 mm Proximity Probes, Standard Mount

330101 and 330191, 3/8-24 UNF-2A, without armor 7

330102 and 330192, 3/8-24 UNF-2A, with armor 6

330103 and 330193, M10X1 thread, without armor 7

330104 and 330194, M10X1 thread, with armor 6