

# 3300 XL 8mm Proximity Transducer System

## Bently Nevada\* Asset Condition Monitoring

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### Description

The 3300 XL 8 mm Proximity Transducer System consists of:

- One 3300 XL 8 mm probe,
- One 3300 XL extension cable<sup>1</sup>, and
- One 3300 XL Proximitor\* Sensor<sup>2</sup>.



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 measurements<sup>3</sup>.

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-metre system also fully complies with the American Petroleum Institute's (API) 670 Standard (4<sup>th</sup> Edition) 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 interchangeable<sup>4</sup> with other non-XL 3300 series 5 mm and 8 mm transducer system components<sup>5</sup>. This compatibility includes the 3300 5 mm probe, for applications in which an 8 mm probe is too large for the available mounting space<sup>6,7</sup>.

### Proximitor Sensor

The 3300 XL Proximitor Sensor incorporates numerous improvements over previous designs. Its physical packaging allows you to use it in high-density DIN-rail installations. You can also mount the sensor in a traditional panel mount configuration, where it shares an identical 4-hole mounting "footprint" with older Proximitor Sensor designs. The mounting base for either option provides electrical isolation and eliminates the need for separate isolator plates. The 3300 XL Proximitor Sensor is highly immune to radio frequency interference, allowing you to install it in fiberglass housings without adverse effects from nearby radio frequency signals. The 3300 XL Proximitor Sensor's improved RFI/EMI immunity satisfies European CE mark approvals without requiring special shielded conduit or metallic housings, resulting in lower installation costs and complexity.

The 3300 XL's SpringLoc terminal strips require no special installation tools and facilitate faster, more robust field wiring connections by eliminating screw-type clamping mechanisms that can loosen.



## Proximity Probe and Extension Cable

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.

## Connectors

The 3300 XL probe, extension cable, and Proximitor sensor have corrosion-resistant, gold-plated ClickLoc\* connectors. These connectors require only finger-tight torque (the connectors will "click" when tight), and the specially-engineered locking mechanism prevents the connectors from loosening. These connectors require no special tools for installation or removal.

You can order the 3300 XL 8 mm probes and extension cables with connector protectors already installed. We can also supply connector protectors separately for field installations (such as when an application must run the cable through restrictive conduit). We recommend connector protectors for all installations to provide increased environmental protection<sup>8</sup>.

## Extended Temperature Range Applications

An extended temperature range (ETR) probe and ETR extension cable are available for applications in which either the probe lead or extension cable may exceed the standard 177 °C (350 °F) temperature specification. The ETR probe has an extended temperature rating for up to 218 °C (425 °F). The ETR extension cable rating is up to 260 °C (500 °F). Both the ETR probe and cable are compatible with standard temperature probes and cables, for example, you can utilize an ETR probe with the 330130 extension cable. The ETR system uses the standard 3300 XL Proximitor Sensor. Note that when you use any ETR component as part of your system, the ETR component limits the system accuracy to the accuracy of the ETR system.

## Description Notes:

1. One-metre systems do not use an extension cable.
2. Proximitor sensors are supplied by default from the factory calibrated to AISI 4140 steel. Calibration to other target materials is available upon request.
3. Consult Bently Nevada\* Applications Note, *Considerations when using Eddy Current Proximity Probes for Overspeed Protection Applications*, when considering this transducer system for tachometer or overspeed measurements.
4. 3300 XL 8 mm components are both electrically and physically interchangeable with non-XL 3300 5 mm and 8 mm components. Although the packaging of the 3300 XL Proximitor Sensor differs from its predecessor, its design fits in the same 4-hole mounting pattern when used with the 4-hole mounting base, and will fit within the same mounting space specifications (when minimum permissible cable bend radius is observed).
5. Mixing XL and non-XL 3300-series 5 mm and 8 mm system components limits system performance to the specifications for the non-XL 3300 5 mm and 8 mm Transducer System.
6. The 3300-series 5 mm probe (refer to Specifications and Ordering Information p/n 141605-01) uses smaller physical packaging, but does not reduce the side view clearances or tip-to-tip spacing requirements as compared to an 8 mm probe. It is used when physical (not electrical) constraints preclude the use of an 8 mm probe. When your application requires narrow side view probes, use the 3300 NSv\* Proximity Transducer System (refer to Specifications and Ordering Information p/n 147385-01).
7. 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.
8. Each 3300 XL extension cable includes silicone tape that you can use instead of connector protectors. We do not recommend silicone tape for applications that will expose the probe-to-extension cable connection to turbine oil.

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

330195-02-12-CXX-DXX, 3/8-24 UNF threads

330196-05-30-CXX-DXX, M10 x 1 threads

C: Total Length Option

05	0.5 metre (1.6 feet)
10	1.0 metre (3.3 feet)
15	1.5 metre (4.9 feet)
20	2.0 metres (6.6 feet)
50	5.0 metres (16.4 feet)

**Note:** 5-metre probes are designed for use with the 5-metre Proximitor sensor only.

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90	9.0 metres (29.5 feet)
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D: Agency Approval Option

00	Not required
05	CSA, ATEX, IECEx Approvals

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

330197 3300 XL 8 mm Probe without armor<sup>1</sup>

330198 3300 XL 8 mm Probe with armor<sup>1</sup>

Part Number-AXX-BXX-CXX

A: Overall Case Length Option

Order in increments of 0.5 in

**Length configurations:**

**Maximum length:** 9.5 in

**Minimum length:** 1.0 in

**Example:** 3 5 = 3.5 in

B: Total Length Option

05	0.5 metre (1.6 feet)
10	1.0 metre (3.3 feet)
15	1.5 metres (4.9 feet)
20	2.0 metres (6.6 feet)
50	5.0 metres (16.4 feet)

**Note:** 5-metre probes are designed for use with the 5-metre Proximitor sensor only.

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90	9.0 metres (29.5 feet)
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C: Agency Approval Option

00	Not required
05	CSA, ATEX, IECEx Approvals

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### Aluminum probe clamp bracket<sup>1</sup>

137491-AXX

A: Mounting screw option

01	10-24 UNC-2A mounting screws
02	M5 x 0.8-6g mounting screws

The aluminum clamp bracket is an unthreaded mounting bracket designed for use with the smooth case probes (330140, 330141, 330197 and 330198). After gapping the probe, tighten the clamp bracket by tightening the screws. The mounting screws have pre-drilled holes for safety wire.

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### Aluminum probe threaded mounting bracket

137492-AXX

A: Thread size

01	3/8-24
04	M10 x 1

The aluminum probe threaded mounting bracket is the standard mounting bracket for most 3300 and 3300 XL probe installations. The **-01** option includes two 10-24 UNC-2A mounting screws. The **-04** option includes two M5 x 0.8-6g mounting screws. The mounting screws have pre-drilled holes for safety wire.

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### Phenolic threaded probe mounting bracket

27474-AXX

A: Thread size

01	3/8-24
04	M10 x 1

We recommend the phenolic threaded mounting bracket if your application requires additional electric isolation from the mounting location (as in some generator and electrical motor bearing locations). The **-01** option includes two 10-24 UNC-2A mounting screws. The **-04** option includes two M5 x 0.8-6g mounting screws. The mounting screws have pre-drilled holes for safety wire.