MANUFACTURER DOCUMENT PACKAGE

# Manufacturer's Manual

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3300 XL 8 MM PROXIMITY TRANSDUCER SYSTEM

## 330102-00-12-10-01-05

EIGHT MILLIMETER PROXIMITY PROBE

OFFICIAL SOURCES

Bently Nevada official manufacturer document for 3300 XL 8 mm proximity transducer system. Selected pages retain their original content, color and aspect ratio.

# 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 cable[1], and
- One 3300 XL Proximitor Sensor[2].

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[3].

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 interchangeable[4] with other non-XL 3300 series 5 mm and 8 mm transducer system components[5]. 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

## 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[8].

## 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-meter 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.

# 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.<br>**Length configurations:**<br>Maximum unthreaded length: 8.8 in.<br>Minimum unthreaded length: 0.0 in.<br>Example: **0 4** = 0.4 in. | |
| **B: Overall Case Length Option** | |
| Order in increments of 0.1 in.<br>**Standard thread configurations:**<br>Maximum case length: 9.6 in.<br>Minimum case length: 0.8 in.<br>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-EE**3/8-24 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 |

330101-00-08-05-02-00, 330101-00-08-05-02-05, 330101-00-08-10-02-00, 330101-00-08-10-02-05, 330101-00-12-10-02-00, 330101-00-12-10-02-05, 330101-00-16-10-02-00, 330101-00-16-10-02-05, 330101-00-20-05-02-00, 330101-00-20-10-02-00, 330101-00-20-10-02-05, 330101-00-30-10-02-00, 330101-00-30-10-02-05, 330101-00-40-05-02-00, 330101-00-40-10-02-00, 330101-00-40-10-02-05, 330101-00-60-10-02-00, 330101-00-60-10-02-05, 330102-00-20-10-02-00, 330103-00-02-10-02-05, 330103-00-04-10-02-00, 330103-00-05-10-02-00, 330104-00-06-10-02-00, 330104-01-05-50-02-00, 330105-02-12-05-02-00, 330105-02-12-05-02-05, 330105-02-12-10-02-00, 330105-02-12-10-02-05, 330106-05-30-05-02-00, 330106-05-30-05-02-05, 330106-05-30-10-02-00, 330106-05-30-10-02-05.

## Ordering Information for Proximitor Sensor

### 3300 XL Proximitor Sensor

**330180-AA-BB**

| **A: Total Length and Mounting Option** | |
|---|---|
| **10** | 1.0 meter (3.3 feet) system length, panel mount |
| **11** | 1.0 meter (3.3 feet) system length, DIN mount |
| **12** | 1.0 meter (3.3 feet) system length, no mounting hardware |
| **50** | 5.0 meters (16.4 feet) system length, panel mount |
| **51** | 5.0 meters (16.4 feet) system length, DIN mount |
| **52** | 5.0 meters (16.4 feet) system length, no mounting hardware |
| **90** | 9.0 meters (29.5 feet) system length, panel mount |
| **91** | 9.0 meters (29.5 feet) system length, DIN mount |
| **92** | 9.0 meters (29.5 feet) system length, no mounting hardware |
| **B: Agency Approval Option** | |
| **00** | Not required |
| **05** | CSA, ATEX, IECEx Approvals |

## Ordering Information for Extension Cables

### 3300 XL Standard Extension Cable

**330130-AAA-BB-CC**

Make sure that the extension cable length and the probe length, when added together, equal the Proximitor Sensor total length.

| **A: Cable Length Option** | |
|---|---|
| **030** | 3.0 meters (9.8 feet) |
| **035** | 3.5 meters (13.1 feet) |
| **040** | 4.0 meters (11.5 feet) |
| **045** | 4.5 meters (14.8 feet) |
| **060** | 6.0 meters (19.7 feet) |
| **070** | 7.0 meters (22.9 feet) |
| **075** | 7.5 meters (24.6 feet) |
| **080** | 8.0 meters (26.2 feet) |
| **085** | 8.5 meters (27.9 feet) |
| **B: Connector Protector and Cable Option** | |
| **00** | Standard cable |
| **01** | Armored cable |
| **02** | Standard cable with connector protector |

| | |
|---|---|
| **03** | Armored cable with connector protector |
| **10** | FluidLoc cable |
| **11** | Armored FluidLoc cable |
| **12** | FluidLoc cable with connector protector |
| **13** | Armored FluidLoc cable with connector protector |
| **C: Agency Approval Option** | |
| **00** | Not required |
| **05** | CSA, ATEX, IECEx Approvals |

## 3300 XL Extended Temperature Range (ETR) Extension Cable

**330190-AAA-BB-CC**

Make sure that the extension cable length and the probe length, when added together, equal the Proximitor Sensor total length.

| | |
|---|---|
| **A: Cable Length Option** | |
| **030** | 3.0 meters (9.8 feet) |
| **035** | 3.5 meters (13.1 feet) |
| **040** | 4.0 meters (11.5 feet) |
| **045** | 4.5 meters (14.8 feet) |
| **070** | 7.0 meters (22.9 feet) |
| **075** | 7.5 meters (24.6 feet) |
| **080** | 8.0 meters (26.2 feet) |
| **085** | 8.5 meters (27.9 feet) |
| **B: Cable Option** | |
| **00** | Standard cable |
| **01** | Armored cable |
| **C: Agency Approval Option** | |
| **00** | Not required |
| **05** | CSA, ATEX, IECEx Approvals |

## Accessories

| | |
|---|---|
| 141078 | 3300 XL 8 mm and 3300 5 mm Proximity Transducer System Manual. |
| 175751 | 3300 XL Multi-Purpose Stainless Steel Housing. 12”x12”x6”. Can hold up to 8 Proximitor Sensors in a DIN-mount configuration or 6 Proximitor Sensors in a panel-mount configuration. (Available with ATEX Zone 0 and Zone 1 certifications.) |
| 176467 | 3300 XL Multi-Purpose Stainless Steel Housing. 12”x8”x6”. Can hold up to 4 3300XL Proximitor Sensors in both DIN-mount and panel-mount configurations. (Available with ATEX Zone 0 and Zone 1 certifications.) |
| 330181 | 3300 XL Multi-Purpose Stainless Steel Housing. 13”x9.5”x7”. Can hold up to 8 Proximitor sensors in a DIN-mount configuration or 6 Proximitor Sensors in a panel-mount configuration. Primarily used by customers requiring hazardous area approvals fro their installations. Available with ATEX Zone 0 and Zone 1 and North American Division 1 and Division 2 certifications. |
| 02120015 | Bulk field wire. 1.0 mm2 (18 AWG), 3 conductor, twisted, shielded cable with drain wire. Specify length in feet. |
| 138492-01 | Replacement panel-mount mounting pad. |
| 138493-01 | Replacement DIN-mount mounting pad. |