

3300 XL 8mm Proximity Transducer System

Datasheet

Bently Nevada Machinery Condition Monitoring

141194 Rev. AJ



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}.



Proximator Sensor

The 3300 XL Proximator 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 Proximator Sensor designs. The mounting base for either option provides electrical isolation and eliminates the need for separate isolator plates. The 3300 XL Proximator 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 Proximator 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 Proximator 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 protection⁸.

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 Proximator 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. Proximator 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 Proximity 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 Document 141605) uses smaller physical packaging, but does not reduce the side view clearances or tip-to-tip spacing requirements as compared to an 8mm probe. It is used when physical (not electrical) constraints preclude the use of an 8mm probe. When your application requires narrow side view probes, use the 3300 NSv Proximity Transducer System (refer to Document 147385).

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.

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 Proximity 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 Proximity Sensors in a DIN-mount configuration or 6 Proximity 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 Proximity 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 Proximity sensors in a DIN-mount configuration or 6 Proximity Sensors in a panel-mount configuration. Primarily used by customers requiring hazardous area approvals from 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. |