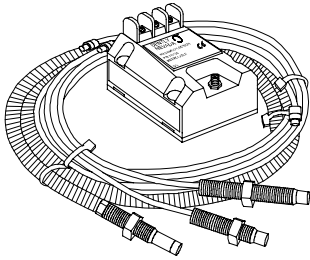


Specifications and Ordering Information

3300 Proximity Transducer System

Patents: 5,016,343; 5,126,664; 5,351,388; and 5,685,884



Description

Transducer System

The 3300 Proximity Transducer System consists of:

- a 3300 XL 8 mm probe or 3300 5 mm probe ^{1,2}
- a 3300 XL extension cable
- a 3300 Proximitor[®] Sensor ^{3, 4, 5}

The system provides an output voltage directly proportional to the distance between the probe tip and the observed conductive surface. It is capable of both static (position) and dynamic (vibration) measurements, and is primarily used for vibration and position measurement applications on fluid-film bearing machines, as well as Keyphasor[®] and speed measurement applications ⁶.

The system provides an accurate, stable signal output over a wide temperature range. All 3300 Proximity Transducer Systems achieve this level of performance while allowing complete interchangeability of probe, extension cable, and Proximitor[®] Sensor without the need for individual component matching or bench calibration.

Proximitor[®] Sensor

The 3300 Proximitor[®] Sensor offers many improvements over previous Bently Nevada eddy current transducers with better linearity and temperature stability. It also uses an integral isolation plate as its base, eliminating the need for separate isolator plates.

Proximity Probes and Extension Cable

The 3300 XL 8 mm probe, 3300 5 mm probe, and 3300 XL 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 is more securely attached as well, incorporating a patented CableLoc[™] design that provides 330 N (75 lb) pull strength for 8 mm probe where the probe cable attaches to the probe tip.

Probes (8 mm only) and Extension Cables can also be ordered 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 and 3300XL probes and extension cable have corrosion-resistant, gold-plated brass ClickLoc[™] connectors. These connectors require only finger-tight torque (connectors will "click"), and the specially engineered locking mechanism prevents the connectors from loosening. They do not require any special tools for installation or removal.

3300 Probes and Extension Cables can also be ordered with connector protectors already installed, or supplied separately for installation in the field (such as when the cable must be run through restrictive conduit). Connector protectors are recommended for all installations and provide increased environmental protection⁷.

Notes:

1. A 5 mm probe uses smaller physical packaging while providing the same linear range as an 8 mm probe; however, it does not permit reduced sideview clearances or tip-to-tip spacing requirements compared to an 8 mm probe. It is used when physical (not electrical) constraints preclude the use of an 8 mm probe, such as mounting between thrust bearing pads or other constrained spaces. When narrow sideview probes are required, consult your Bently Nevada Sales and Service Professional.
2. 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. Bently Nevada recommends the use of 8 mm probes when possible to provide optimal robustness against physical abuse.
3. A 3300 XL Proximitor Sensor is available and provides numerous improvements over the non-XL version. It is electrically and mechanically interchangeable with the non-XL version, and is recommended as best available technology for most applications. Although the packaging of the 3300 XL Proximitor sensor differs from its predecessor, it is designed to fit 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). Consult Specifications and Ordering Information (p/n 141194-01) or our Bently Nevada Sales and Service Professional for more information.
4. When XL and non-XL components are mixed, system performance is limited to the specifications for the non-XL 3300 system.
5. Proximitor® Sensors are supplied by default from the factory calibrated to AISI 4140 steel. Calibration to other target materials is available upon request.
6. Consult Bently Nevada Applications Note AN085 when considering this transducer system for tachometer or overspeed measurements.
7. Silicone tape is also provided with each 3300 XL extension cable and can be used instead of connector protectors. Silicone tape is not recommended in applications where the probe-to-extension cable connection will be exposed to turbine oil.

Specifications

Unless otherwise noted, the following specifications are for a proximity transducer system between 18°C and 27°C (64°F to 80°F) 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).

Electrical

Proximitor® Sensor Input: Accepts one noncontacting 3300 5 mm, 3300 8 mm or 3300 XL 8 mm Proximity Probe and Extension Cable.

Power: Requires -17.5 Vdc to -26 Vdc at 12 mA maximum consumption. 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

<i>Probe dc resistance (R_{PROBE})</i>	
Probe Length (m)	Resistance from the Center Conductor to the Outer Conductor (Ω)
0.5	7.45 ± 0.50
1.0	7.59 ± 0.50
1.5	7.73 ± 0.50
2.0	7.88 ± 0.50
5.0	8.73 ± 0.70
9.0	9.87 ± 0.90

<i>Extension cable dc resistance</i>		
Length of Extension Cable	Resistance from Center Conductor to Center Conductor (R _{CORE}) (Ω)	Resistance from Outer Conductor to Outer Conductor (R _{JACKET}) (Ω)
3.0	0.66 ± 0.10	0.20 ± 0.04
3.5	0.77 ± 0.12	0.23 ± 0.05
4.0	0.88 ± 0.13	0.26 ± 0.05
4.5	0.99 ± 0.15	0.30 ± 0.06
7.0	1.54 ± 0.23	0.46 ± 0.09
7.5	1.65 ± 0.25	0.49 ± 0.10
8.0	1.76 ± 0.26	0.53 ± 0.11
8.5	1.87 ± 0.28	0.56 ± 0.11

Note: Outer conductor refers to the shielded conductor which is attached to the connector, not the armor braid.

Extension cable capacitance: 69.9 pF/m (21.3 pF/ft) typical.

Field Wiring Length: Recommend using three-conductor shielded triad cable. 305 metres (1,000 feet) maximum length between 3300 Proximity Transducer and monitor. Consult Performance Specification 155687 for signal rolloff at high frequencies when using longer field wiring lengths or external safety barriers located some distance from the monitoring system.

Minimum unthreaded length: 0.0 mm = **0 0**.
Example: 0 6 = 60 mm.

B: Overall Case Length Option

Order in increments of 10 mm.
Metric thread configurations:
 Maximum length: 250 mm
 Minimum length: 20 mm
Examples: 0 6 = 60 mm

C: Total Length Option

0 5 0.5 metre (1.6 feet)
1 0 1.0 metre (3.3 feet)
1 5 1.5 metres (4.9 feet)
2 0 2.0 metres (6.6 feet)
5 0 5.0 metres (16.4 feet)
9 0 9.0 metres (29.5 feet)

D: Connector Option

0 0 Connector not installed, standard cable
0 1 Miniature coaxial ClickLoc™ connector with connector protector, standard cable
0 2 Miniature coaxial ClickLoc™ connector, standard cable
1 0 Connector not installed, FluidLoc® cable
1 1 Miniature coaxial ClickLoc™ connector with connector protector, FluidLoc® cable
1 2 Miniature coaxial ClickLoc™ connector, FluidLoc® cable

E: Agency Approval Option

0 0 Not required
0 5 Multiple Approvals

3300 5 mm Proximity Probes, Metric

330173 3300 5 mm Probe, M8 x 1 thread, without armor
330174 3300 5 mm Probe, M8 x 1 thread, with armor

Part Number-AXX-BXX-CXX-DXX-EXX
Option Descriptions

A: Unthreaded Length Option

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

Order in increments of 10 mm.
Length configuration:
 Maximum unthreaded length: 230 mm = **2 3**.
 Minimum unthreaded length: 0.0 mm = **0 0**.
Example: 0 6 = 60 mm.

B: Overall Case Length Option

Order in increments of 10 mm.
Metric thread configurations:
 Maximum length: 250 mm = **2 5**.
 Minimum length: 20 mm = **0 2**.
Examples: 0 6 = 60 mm.

C: Total Length Option

0 5 0.5 metre (1.6 feet)
1 0 1.0 metre (3.3 feet)
2 0 2.0 metres (6.6 feet)
5 0 5.0 metres (16.4 feet)
9 0 9.0 metres (29.5 feet)

D: Connector Option

0 0 No connector supplied, standard cables
0 1 Miniature coaxial ClickLoc™ connector with connector protector, standard cable
0 2 Miniature coaxial ClickLoc™ connector, standard cable

E: Agency Approval Option

0 0 Not required
0 5 Multiple Approvals

3300 XL 8 mm Reverse Mount probe, 3/8-24 UNF threads
330105-A02-B12-CXX-DXX-EXX

3300 XL 8 mm Reverse Mount probe, M10 x 1 threads
330106-A05-B30-CXX-DXX-EXX

Option Descriptions

C: Total Length Option

0 5 0.5 metre (1.6 feet)
1 0 1.0 metre (3.3 feet)
1 5 1.5 metres (4.9 feet)
2 0 2.0 metres (6.6 feet)
5 0 5.0 metres (16.4 feet)
9 0 9.0 metres (29.5 feet)

D: Connector Option

0 0 Connector not installed, standard cable
0 2 Miniature ClickLoc™ coaxial connector, standard cable

E: Agency Approval Option

0 0 Not required
0 5 Multiple Approvals

3300 XL 8 mm Proximity Probes, Smooth Case

330140 3300 XL 8 mm Probe without armor
330141 3300 XL 8 mm Probe with armor

Part Number-AXX-BXX-CXX-DXX
Option Descriptions

A: Overall Case Length Option

Order in increments of 0.1 in
Threaded length configurations:
 Maximum length: 9.6 in = **9 6**.
 Minimum length: 0.8 in = **0 8**.
Example: 2 4 = 2.4 in