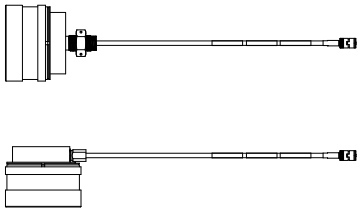
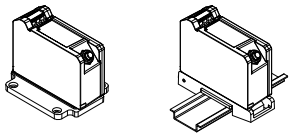
3300 XL 50 mm Proximity Transducer System

Bently Nevada* Asset Condition Monitoring





Description

The 3300 XL 50 mm Transducer System consists of a separate 50 mm probe, an extension cable, and a 3300 XL 50 mm Proximitor* Sensor. The large diameter coil gives this system a maximum linear range of 27.9 mm (1100 mils), the longest linear range of our eddy current transducer line. This linear range makes the 3300 XL 50mm Transducer System ideal for measuring the differential expansion (DE) or rotor expansion (RX) of large steam turbine generators that results from the difference in growth rates between the turbine rotor and the machine stator (casing).

Measuring Differential Expansion

The Differential Expansion measurement is made by using two proximity transducers that observe a collar or ramp some distance from the thrust bearing. Typical transducer mounting arrangements that require the 3300 XL 50 mm Transducer's long linear range include:

- Two transducers observing the same side of a collar.
- Two complementary input transducers observing opposite sides of a collar, effectively doubling the measurable DE range.

The criteria for selecting a mounting method are the size of the available target, the expected amount of rotor axial movement, and the type of DE target that exists in the machine. If the collar height is sufficient and the required total measurement range is less than 27.9 mm (1.1 inches), the preferred configuration for redundant measurements is to use two transducers observing the same side of a collar. When 28 mm to 56 mm (1.1 to 2.2 inches) of total range are required, install the transducers in a complementary fashion on opposite sides of the differential expansion collar or other target material.

System Compatibility

The 3300 XL 50 mm probe comes in three case & thread configurations to physically replace all standard 7200 50 mm systems (including side and rear exit probes). The standard 7200 style mounting brackets are still available as accessories. In addition, a new bracket to adapt the probe to the 50mm DE Integral transducer sliding mount base is also available. The Proximitor Sensor has a 0.394 V/mm (10 mV/mil) output that is identical to that of the 7200 and 50 mm DE Integral systems, which allows customers to upgrade without requiring any changes in the monitor configuration. When upgrading from previous systems, every transducer system component (probe, extension cable, and Proximitor Sensor) must be replaced with 3300 XL 50 mm components.

Proximitor Sensor Temperature Range

Operating Temperature:

-51°C to +100°C (-60°F to +212°F)

Storage Temperature:

-51°C to +105°C (-60°F to +221°F)

Sliding Bracket Temperature Range

Operating and Storage Temperature:

-35°C to +200°C (-31°F to +392°F)

Relative Humidity:

Less than a 3% change in Average Scale Factor (ASF) when tested in accordance with IEC standard 68-2-66.

Probe Pressure:

3300 XL probes are designed to seal differential pressure between the probe tip and case. The probe is sealed with Viton® O-rings. Probes are not pressure tested prior to shipment. Contact our custom design department if you require a test of the pressure seal for your application

Note: It is the responsibility of the customer or user to ensure that all liquids and gases are contained and safely controlled should leakage occur from a proximity probe. In addition, solutions with high or low pH values may erode the tip assembly of the probe causing media leakage into surrounding areas. Bently Nevada will not be held responsible for any damages resulting from leaking 3300 XL proximity probes. In addition, 3300 XL proximity probes will not be replaced under the service plan due to probe leakage.

Patents:

5,685,884

6,293,005

6,643,909

7,239,133

Components or procedures described in these patents apply to this product.

Ordering Information

3300 XL 50 mm Proximity Probe:

330876-AXX-BXX-CXX-DXX

A: Probe Case Type Option
- **0 1** ½-20 Thread – Straight Exit
- **0 2** M14x1.5 Thread – Straight Exit
- **0 3** Smooth 1.99 in dia - Side Exit

B: Total Length Option
- **1 0** 1.0 metre (3.3 feet)
- **5 0** 5.0 metres (16.4 feet)
- **9 0** 9.0 metres (29.5 feet)

C: Armor Option
- **0 0** High Temperature FluidLoc Cable
- **0 1** High Temperature FluidLoc Cable with Armor

D: Agency Approval Option
- **0 0** No Approvals
- **0 5** Multiple Approvals

3300 XL 50 mm Proximitor Sensor

330878-AXX-BXX

A: Total Length and Mounting Option
- **5 0** 5.0 metres (16.4 feet) system length, panel mount
- **5 1** 5.0 metres (16.4 feet) system length, DIN mount
- **9 0** 9.0 metres (29.5 feet) system length, panel mount
- **9 1** 9.0 metres (29.5 feet) system length, DIN mount

B: Agency Approval Option
- **0 0** No Approvals
- **0 5** Multiple Approvals

3300 XL 50 mm Extension Cable

330877-AXXX-BXX-CXX

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

A: Cable Length Option
- **0 4 0** 4.0 metres (13.1 feet)
- **0 8 0** 8.0 metres (26.2 feet)

B: Armor and Cable Option
- **3 6** FluidLoc ext. cable
- **3 7** FluidLoc ext. cable w/ armor

C: Agency Approval Option

0 0 No Approvals

0 5 Multiple Approvals

Mounting Brackets

Each Sliding Mounting Bracket comes with

- One sliding plate
- One base plate
- Sliding plate securing bolts with safety wire holes
- Lock washers

The material used for the mounting brackets is T6061-T6 aluminum. Base plate securing bolts are not provided; recommended bolt size is 3/8in or M8 socket head bolts.

3300 XL 50 mm Sliding Probe Bracket and Clamp:

330879-AXX-BXX

A: Probe Clamp Style

0 1 Left Exit

0 2 Right Exit

0 3 Two clamps (used for CIDE applications)[1]

B: DE Mounting Bracket

0 0 No Mounting Bracket; Clamp Only

0 1 Single DE Mounting Bracket[2]

0 2 Short CIDE Mounting Bracket[3]

0 3 Long CIDE Mounting Bracket[3]

This bracket is recommended for most installations. While any probe may be used, the smooth side exit probe is most often used with this bracket.

1. When ordering two clamps, one right exit and one left exit clamp will be provided so that the cables exit from the same side of the CIDE bracket.
2. The B01 probe mounting bracket option is only available with the A01 or A02 probe clamp style options.
3. The B02 and B03 probe mounting bracket options are only available with the A03 probe clamp style options.
4. When replacing 50mm DE 130713, part number 330879-AA-**00** should be ordered. Ordering with BB=00 will prevent unnecessary parts from being ordered with the clamp.

Sliding Mounting Brackets without clamps

131071-01

Single Transducer Mounting Bracket

131030-01

Short Complementary Input Differential Expansion (CIDE) Mounting Bracket

131031-01

Long Complementary Input Differential Expansion (CIDE) Mounting Bracket

Non-sliding Mounting Brackets

167285

Kit, 50 mm Clamp Mount (used with smooth-case side exit or threaded straight exit probes).

167286

Kit, 50 mm Bolt Mount (used only with smooth-case side exit probes).

132327-01

50mm DE Transducer Bracket (can be used with 330879 Probe Clamp if vertical sliding clamp is not desired).

Verification Kits

Each verification kit comes with:

- a verification kit bracket
- a spindle micrometer with either 0 to 2 in or 0 to 50 mm range
- two set screws
- a bracket securing bolt

The material used for the verification kit bracket is T6061-T6 aluminum.

131036-01

Verification Kit, Spindle Micrometer with English Units

131036-02

Verification Kit, Spindle Micrometer with Metric Units