

3300 XL 25mm Proximity Transducer System

Datasheet

Bently Nevada Machinery Condition Monitoring

Description

The 3300 XL 25 mm Transducer System consists of a separate 25 mm probe, an extension cable, and a 3300 XL 25 mm Proximitor Sensor. The 0.787 V/mm (20 mV/mil) output gives this system a linear range of 12.7 mm (500 mils). Based on this linear range, the 3300 XL 25 mm Transducer System is suitable for measuring differential expansion (DE) on mid-size to large steam turbine generators caused by the difference in growth rates between the turbine rotor and the machine stator (casing).

Measuring Differential Expansion (DE)

The Differential Expansion measurement is made by two proximity transducers observing a collar or ramp some distance from the thrust bearing. Typical transducer mounting arrangements are:

- 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.

Two transducers with at least one transducer viewing a ramp on a rotor and the second transducer viewing either a separate ramp or a different location on the rotor to compensate for radial movement. This arrangement adds some error to the measurement, but can measure a longer total DE distance than the complementary measurement.

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 (collar versus ramp). If sufficient collar height is available, two transducers observing the same side of a collar is the preferred configuration. These two transducers provide redundant measurements.




Ordering Information

3300 XL 25 mm Proximity Probe


330851-AA-BBB-CCC-DD-EE-FF

A: Probe Case Type Option

 Standard case types are options 01 through 04.

01	1 1/4 - 12 thread
02	M30x2 Thread
03	Smooth 1.06 in. dia. - Rear Exit
04	Smooth 1.06 in. dia. - Side Exit
05	1 1/2 - 12 thread
06	M39x1.5 Thread
07	Smooth 1.5 in. dia. - Rear Exit
08	Smooth 1.5 in. dia. - Side Exit

B: Unthreaded Length Option

 Standard unthreaded length is 0.0 mm or 0.0 in. There is an additional charge for non-standard unthreaded lengths.

Unthreaded length must be at least 26 mm or 1.0 in. less than the case length.

Unthreaded length option is 0.0 for smooth case probe types.

Metric Case Types Order in increments of 2 mm


Maximum Unthreaded Length	224 mm
Minimum Unthreaded Length	0 mm
Example	050 = 50 mm

English Case Types Order in increments of 0.1 in.

Maximum Unthreaded Length	8.9 in.
Minimum Unthreaded	0.0 in.

Length	
Example	025 = 2.5 in.

C: Overall Case Length Option

 Standard csae lengths are 26, 40, 60, 80, 100 and 250 mm for Metric cases and 1.0, 2.0, 3.0, 4.0, and 9.9 in. for English cases. There is an additional charge for non-standard lengths.

Metric Case Types Order in increments of 2 mm

Maximum Unthreaded Length	250 mm
Minimum Unthreaded Length	26 mm
Example	050 = 50 mm

English and Smooth Case Types Order in increments of 0.1 in.

Maximum Unthreaded Length	9.9 in.
Minimum Unthreaded Length	1.0 in. (1.5 in. for side exit case types)
Example	020 = 2.0 in.


D: Total Length Option

10	1.0 metre (3.3 feet)
50	5.0 metres (16.4 feet)
90	9.0 metres (29.5 feet)

 Five metre probes are designed for use with the five metre Proximity Sensor ONLY.


E: Armor Option

00	No Armor
01	with SST Armor

 When ordering SST Armor, the minimum probe length is 28 mm or 1.1 in.

F: Agency Approval Option

00	No Approvals
05	Multiple Approvals

 For a shorter delivery time, order commonly stocked multi-approvals probes. Currently, stocked probes consist of the following part numbers:

330851-01-000-020-10-00-05
330851-01-000-030-10-00-05
330851-02-000-040-10-00-05
330851-02-000-080-10-00-05
330851-04-000-015-10-00-05
330851-04-000-020-10-00-05

3300 XL 25 mm Proximitior Sensor

330850-AA-BB

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 25 mm Extension Cable

330854-AAA-BB-CC



Make sure that the extension cable length and the probe length, when added together, equal the Proximitior 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

2 4	High Temperature FluidLoc cable
2 5	Armored High Temperature FluidLoc cable

C: Agency Approval Option

0 0	No Approvals
0 5	Multiple Approvals

3300 XL Sliding Bracket

330853-AA-BB

A: Bracket Length Option

0 1	Short – Single Differential Expansion Application
0 2	Long – Complementary Input Differential Expansion Application

B: Probe Adapter Option

0 0	Adapter not supplied
0 1	1¼-12 Thread
0 2	M30x2 Thread
0 3	1.06 in diameter Smooth



When probe adapters are selected, one is supplied with the short bracket length and two are supplied with the long bracket length.

Dial Indicator Verification Kit

The dial indicator verification kit contains all of the parts needed to verify accuracy of a differential expansion installation. The kit contains a dial indicator, magnetic base, flex mounting arm, and indicator holding rod all housed in a protective carry case

163854-AA

A: Measurement Units Option

0 1	English Units (0–2 Inch)
0 2	Metric Units (0–50 mm)

Accessories

163235	3300 XL 25 mm Manual
161984	Performance Specification
148722-01	3300 XL Test Plug. The 3300 XL Test Plug has three self-contained test pins attached to three color-coded wires 1 metre in length, each terminated in a banana plug. The three-pin adapter plugs into the test pin holes on 3300 XL-style Proximity sensors. It is used to check the performance of the Proximity sensor from the test pin holes in the terminal strip without requiring the removal of the field wiring.
330187	Extended Range Micrometer Kit. The extended range micrometer kit contains a precision micrometer and AISI 4140 target and is intended for acceptance testing of our Bently Nevada extended range transducers. Bracket options are available to hold 8mm – 35mm probes and also the 50 mm DE transducer.
02120015	Bulk field wire. 1.0 mm ² (18 AWG), 3 conductor, twisted, shielded cable with drain wire. Specify length in feet.
02173009	Bulk field wire. 1.0 mm ² (18 AWG), 3 conductor, twisted, shielded cable. Specify length in feet.
138492-01	Replacement panel-mount mounting pad
138493-01	Replacement DIN-mount mounting pad
04310310	3300 XL Proximity Sensor Panel-mount Screws. Package includes four 6-32 UNC thread forming mounting screws (Supplied standard with 3300 XL Proximity Housings [3300 XL option]).
03200006	Silicone self-fusing tape. A 9.1 metre (10 yard) roll of silicone tape to protect connectors. It is easy to install and provides excellent electrical isolation and protection from the environment. It is not

	recommended for use inside the casing of the machine.
40113-02	Connector Protector Kit. Connector Protector Kit for 3300 XL probes and extension cables, including connector protectors and installation tools.
29660-01	Transducer Clamp. Optional mounting clamp for the 1.06" dia smooth 3300 XL 25mm probe case types (-03 and -04 only).
136536-01	Connector Protector Adapter. Makes our previous 3300 connector protector kits compatible with 3300 XL probes and extension cable connectors.
40180-02	Connector Protectors. Package contains 10 pairs of connector protectors.
03839410	Male Connector Protector. Placed on the extension cable to connect to the female connector protector on the probe and provide environmental protection of connectors.
03839420	Female Connector Protector. Placed on the probe lead to connect to the male connector protector on the extension cable and provide environmental protection of connectors. Also placed on the extension cable to slide over the Proximity Sensor connection and protect it from the environment.
330153-08	3300 XL 25 mm Connector Kit. Used on 3300 XL 25 mm probes and extension cables. Contains one male (removable nut) and female ClickLoc connectors, color-coded sleeves and two pieces slit PFA tubing.
163356	Connector Crimp Tool Kit. Includes one set of multi-connector inserts and connector installation instructions. Supplied with carrying case.