Bently Nevada 330780-X1-CN

Official Technical Reference Excerpt

The 11 mm sensor provides the wider linear range used where a standard 8 mm proximity system does not provide enough displacement reach.

PRODUCT ROLE

Characteristic 1

Conditions the matched 11 mm probe and extension-cable signal.

Characteristic 2

Provides a 100 mV/mil scale factor.

Characteristic 3

Extends linear displacement measurement to 160 mil.

Characteristic 4

Supports vibration and static position measurements on rotating machinery.

MANUFACTURER DOCUMENT

Manufacturer document	Bently Nevada 3300 XL 11 mm Proximity Transducer System Datasheet 146256
Application scope	The values below apply to the identified product and its documented system relationship.
Selection rule	Use the complete ordering string and confirm the installed interfaces before selection.

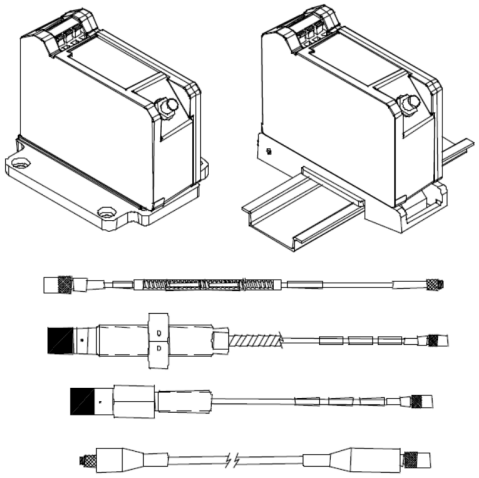
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3300 XL 11 mm Proximity Transducer System

Datasheet

Cordant™

146256 Rev. T



Description

Transducer System

The Bently Nevada™ 3300 XL 11 mm Proximity Transducer System consists of:

- 3300 XL 11 mm probe
- 3300 XL 11 mm extension cable
- 3300 XL 11 mm Proximitor Sensor[1]

The 3300 XL 11 mm Proximity Transducer System has a 3.94 V/mm (100 mV/mil) output for non-contacting vibration and displacement measurements on fluid film bearing machines. The large 11 mm tip enables this transducer system to have a longer linear range compared to our standard 3300 XL 8 mm Transducer System. It is primarily used in the following applications where the longer linear range is necessary:

- Axial (thrust) position measurements
- Ramp differential expansion measurements on steam turbines
- Rod position or rod drop measurements on reciprocating compressors
- Tachometer and zero speed measurements
- Phase reference (Keyphasor) signals

The 3300 XL 11 mm Proximitor Sensor is designed to replace the 7200-series 11 mm and 14 mm Transducer Systems. When upgrading from the 7200-series system to the 3300 XL 11 mm system, every component must be replaced with 3300 XL 11 mm components. In addition, the monitoring system must be updated. If using a 3500 Monitoring System, an updated version of the configuration software that lists the 3300 XL 11 mm Transducer System as a compatible option is required.

Baker Hughes

Specifications

Unless otherwise noted, the following specifications are for a 3300 XL 11 mm Proximitor Sensor, extension cable and probe between 0°C and +45°C (+32°F to +113°F) at a maximum altitude of 2000m, with a -24 Vdc power supply, a 10 kΩ load, our supplied AISI 4140 steel target that is 31 mm (1.2 in) diameter or larger, and a probe gap of 2.5 mm (100 mils). The system accuracy and interchangeability specifications do not apply when using a transducer system calibrated to any target other than our AISI 4140 steel target.

Electrical

Proximitor Sensor	
Input	Accepts one non-contacting 3300 XL 11 mm Proximity Probe and Extension Cable.
Power	Requires -17.5 Vdc to -26 Vdc without barriers at 12 mA maximum consumption, -23 Vdc to -26 Vdc with barriers. 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

Probe dc Resistance	
Probe Length (m)	Resistance from the Center Conductor to the Outer Conductor (R_{PROBE}) (ohms)
1.0	5.9 ± 0.5
5.0	7.2 ± 0.8
9.0	8.5 ± 1.1

Extension Cable dc Resistance		
Length of Extension Cable (m)	Resistance from Center Conductor to Center Conductor (R_{CORE}) (ohms)	Resistance from Coaxial Conductor to Coaxial Conductor (R_{JACKET}) (ohms)
4.0	1.0 ± 0.25	0.3 ± 0.1
8.0	2.0 ± 0.5	0.6 ± 0.2

Extension cable capacitance	69.9 pF/m (21.3 pF/ft) typical
Field wiring	0.2 to 1.5 mm² (16 to 24 AWG) [0.25 to 0.75 mm² (18 to 23 AWG) with ferrules]. Recommend using three-conductor shielded triad cable. Maximum length of 305 meters (1,000 feet) between the 3300 XL Proximitor Sensor and the monitor. See the frequency response graph for signal rolloff at high frequencies when using longer field wiring lengths.
Linear Range	4.0 mm (160 mils). Linear range begins at approximately 0.5 mm (20 mils) from target and is from 0.5 to 4.5 mm (20 to 180 mils) (approximately –1 to –17 Vdc). Extended Deviation from Straight Line (DSL) range is from approximately 0.5 to 5.0 mm (20 to 200 mils) (–1 to –19 Vdc). The extended DSL range is not applicable when using zener barriers.
Recommended Gap Setting	2.5 mm (100 mils)

3300 XL 11 mm Proximitor Sensor

330780-AA-BB	
A: Total Length and Mounting Option	
50	5.0 meter(16.4 feet) system length, panel mount
51	5.0 meter (16.4 feet) system length, DIN mount
52	5.0 meter (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	Multiple approvals

Country specific approvals may be available, consult your local Customer Care Representative for more information.

3300 XL 11 mm Extension Cable

330730-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	
040	4.0 meters (13.1 feet)
080	8.0 meters (26.2 feet)
B: Connector 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	Multiple Approvals

Accessories

146255	3300XL 11 mm User Guide
144979	Performance Specification
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
01609137	BNC (F) to banana plugs
01609138	Proximitor Connector Test Pin wiring (two test pins to a BNC (F) connector)

Related models and selection control

Use these live ApterPower pages for comparison. Verify each complete ordering string independently.

RELATED PRODUCT REFERENCES

Bently Nevada 990-05-50-01-05	Technical-reference companion. Review the complete ordering string before selection.
Bently Nevada 991-06-XX-01-00	Technical-reference companion. Compare the required interface and system position.
Bently Nevada 3300/45	Technical-reference companion. Confirm the execution independently for the intended task.

EXACT-SELECTION CONTROLS

Product identity	Confirm the complete 330780-X1-CN marking.
System interface	3300 XL 11 mm
Technical boundary	Record the installed 330780-X1-CN interfaces and configuration before removal, then prove the monitored value, status and alarm path after installation.
Source	Bently Nevada 3300 XL 11 mm Proximity Transducer System Datasheet 146256

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