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)

Incremental Scale Factor (ISF)	3.94 V/mm (100 mV/mil) ±10% including interchangeability error when measured in increments of 0.5 mm (20 mils) over the 4.0 mm (160 mil) linear range.
Deviation from best fit straight line (DSL)	
Standard DSL range	Less than ±0.10 mm (±4 mils).
Extended DSL range	Less than ±0.15 mm (±6 mils).
System Performance over extended temperatures	Over a probe temperature range of -35°C to +120°C (-31°F to +248°F) with the Proximitor Sensor and extension cable between 0°C to +45°C (+32°F to +113°F), the ISF remains within ±25% of 3.94 V/mm (100 mV/mil), the DSL remains within ±0.51 mm (±20 mils) and the extended range DSL remains within ±0.59 mm (±23 mils) Over a Proximitor Sensor and extension cable temperature range of -35°C to +65°C (-31°F to +149°F) with the probe between 0°C to +45°C (+32°F to +113°F), the ISF remains within ±25% of 3.94 V/mm (100 mV/mil), the DSL remains within ±0.51 mm (±20 mils) and the extended range DSL remains within ±0.59 mm (±23 mils)
Frequency Response	0 to 8 kHz: +0, -3 dB typical, with up to 305 meters (1000 feet) of field wiring.

Cross-talk Limitation:	
Target Size - Flat Surface	
Diameter	
Recommended Minimum	30.5 mm (1.2 in)
Shaft Diameter	
Recommended Minimum	152 mm (6.0 in)

When operating below recommended limits, there will be cross-talk between the probes. To minimize this effect, close the gap as much as possible while still keeping the needed linear range.

A shaft diameter of 76.2 mm (3.0 in) can keep the cross-talk below 50 mV by having the minimum separation of transducer tips; it needs to be at least 64 mm (2.5 in) for axial position measurements and 58 mm (2.3 in) for radial vibration measurements.

Many factors affect the cross-talk when operating below the recommended limit. Consult Performance Specification, document 144979 for additional information.

Effects of 60 Hz Magnetic Fields Up to 300 Gauss (5 meter system)			
Output voltage in mil pp/gauss			
Gap	**Proximitor Sensor**	**Probe**	**Ext. Cable**
0.5 mm (20 mil)	0.006	0.001	0.001
2.5 mm (100 mil)	0.033	0.009	0.005
4.6 mm (180 mil)	0.033	0.027	0.007

Ordering Information

For the detailed listing of country and product-specific approvals, refer to the *Approvals Quick Reference Guide (108M1756)*.

For additional technical documentation, please log in to bntechsupport.com and access the Bently Nevada Media Library.

3300 XL 11 mm Proximity Probes

330701 3300 XL 11 mm Probe, 1/2-20 UNF thread, without armor	
330702 3300 XL 11 mm Probe, 1/2-20 UNF thread, with armor	
330707 3300 XL 11 mm Probe, 5/8-18 UNF thread, without armor	
330708 3300 XL 11 mm Probe, 5/8-18 UNF thread, with armor	
Part Number-AA-BB-CC-DD-EE-	
A:Unthreaded Length Option	
	Unthreaded length must be at least 1.0 inch less than the case length. Order in increments of 0.1 in Length configurations: **Maximum unthreaded length:** 8.9 in **Minimum unthreaded length:** 0.0 in Example: **0 4** = 0.4 in
B: Overall Case Length Option	
	Order in increments of 0.1 in Threaded length configurations: **Maximum case length**: 9.9 in **Minimum case length**: 1.0 in Example: **2 4** = 2.4 in
C: Total Length Option	
10	1.0 meter (3.3 feet)
50	5.0 meters (16.4 feet)
90	9.0 meters (29.5 feet) Five meter probes are designed for use with the five meter Proximitor Sensor only.
D: Connector and Cable-Type Option	
01	Miniature coaxial ClickLoc connector with connector protector, standard cable
02	Miniature coaxial ClickLoc connector, standard cable
11	Miniature coaxial ClickLoc connector with connector protector, FluidLoc cable
12	Miniature coaxial ClickLoc connector, FluidLoc cable
E: Agency Approval Option	
00	Not required
05	Multiple Approvals

3300 XL 11 mm Proximity Probes, Metric

330703 3300 XL 11 mm Probe, M14 x 1.5 thread, without armor
330704 3300 XL 11 mm Probe, M14 x 1.5 thread, with armor
330709 3300 XL 11 mm Probe, M16 x 1.5 thread, without armor
330710 3300 XL 11 mm Probe, M16 x 1.5 thread, with armor
Part Number-AAA-BBB-CC-DD-EE

A:Unthreaded Length Option	
	Unthreaded length must be at least 26 mm less than the case length. Order in increments of 2 mm. Length configuration: **Maximum unthreaded length**: 224 mm **Minimum unthreaded length**: 0 mm Example: **0 6 0** = 60 mm
B: Overall Case Length Option	
	Order in increments of 2 mm. Metric thread configurations: **Maximum length:**250 mm **Minimum length:**26 mm Example: **0 6 0** = 60 mm
C: Total Length Option	
10	1.0 meter (3.3 feet)
50	5.0 meters (16.4 feet)
90	9.0 meters (29.5 feet) Five meter probes are designed for use with the five meter Proximitor Sensor only.
D: Connector and Cable-Type Option	
01	Miniature coaxial ClickLoc connector with connector protector, standard cable
02	Miniature coaxial ClickLoc connector, standard cable
11	Miniature coaxial ClickLoc connector with connector protector, FluidLoc cable
12	Miniature coaxial ClickLoc connector, FluidLoc cable
E: Agency Approval Option	
00	Not required
05	Multiple Approvals

3300 XL 11 mm Reverse Mount Probe

330705-02-18- CC-DD-EE 3/8-24 UNF threads	
330706-005-046- CC-DD-EE M10 x 1 threads	
C: Total Length Option	
10	1.0 meter (3.3 feet)
50	5.0 meters (16.4 feet)
90	9.0 meters (29.5 feet) Five meter probes are designed for use with the five meter Proximitor Sensor only.
D: Connector Option	
02	Miniature ClickLoc coaxial connector
E: Agency Approval Option	
00	Not required
05	Multiple Approvals

For a shorter delivery time, order commonly stocked probes. Currently, stocked probes consist of the following part numbers: 330701-00-10-10-02-00, 330701-00-20-10-02-00, 330703-000-050-10-02-00, 330705-02-18-10-02-00, 330706-005-046-10-02-00.

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)

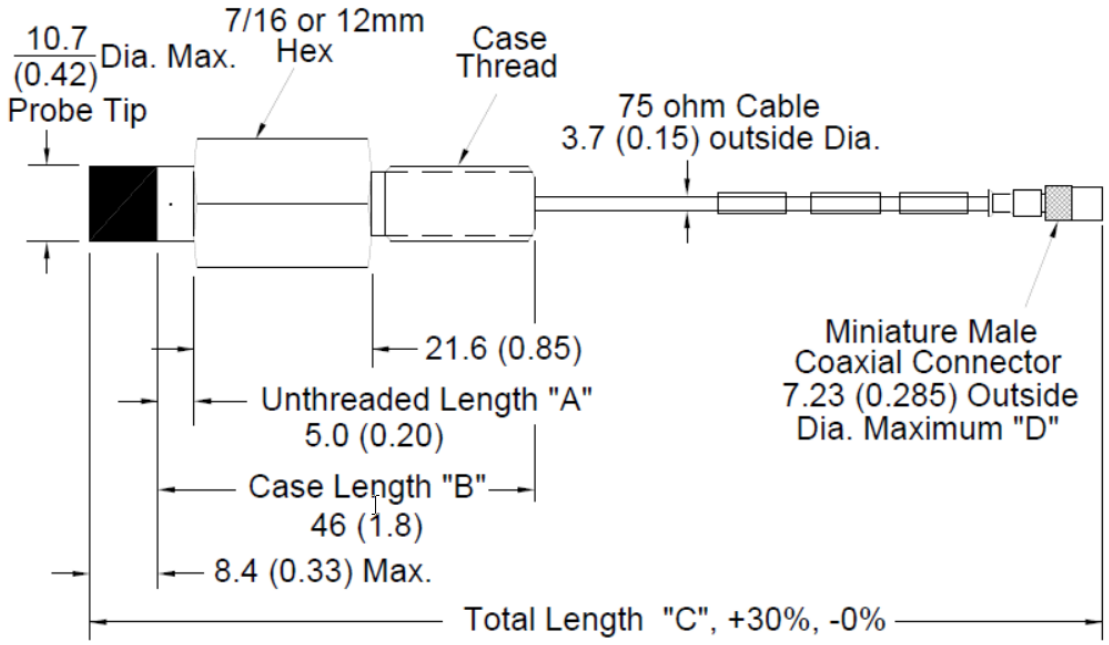


Figure 13: 3300 XL 11 mm Proximity Probes, Reverse Mount

330705, 3/8-24 UNF-2A threads
330706, M10X1 threads

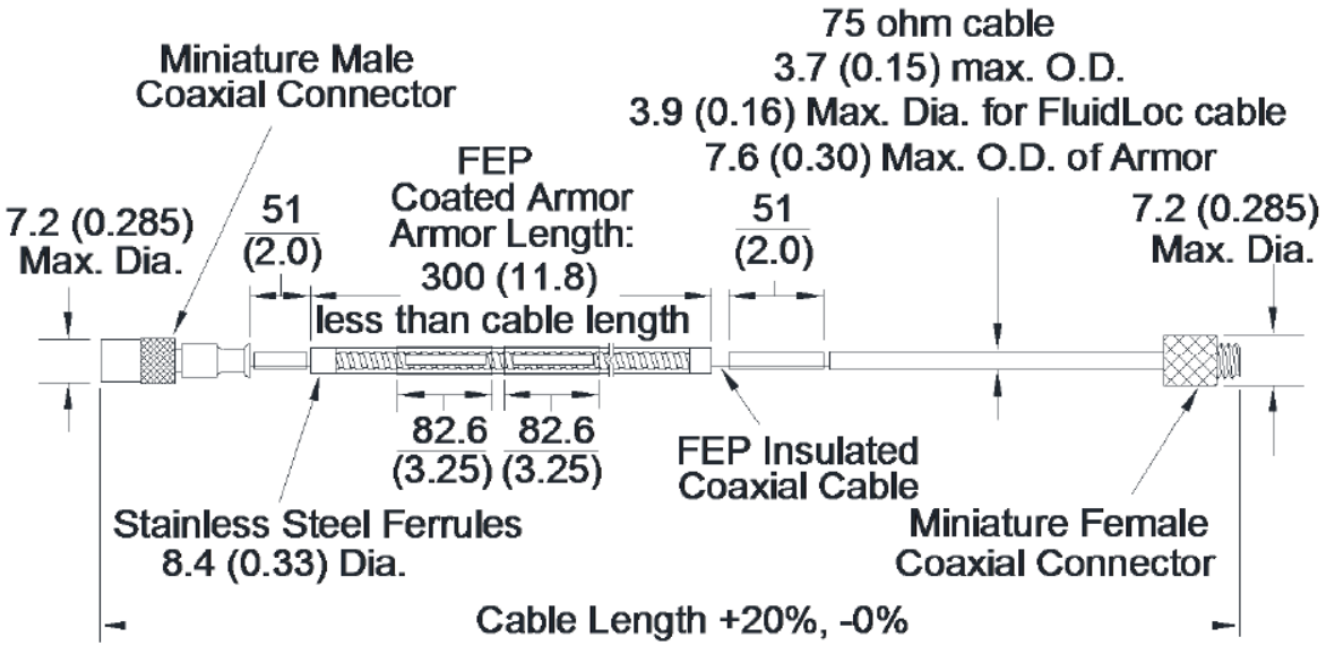


Figure 14: 330730, 3300 XL 11 mm Extension Cable