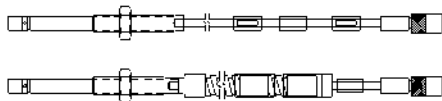
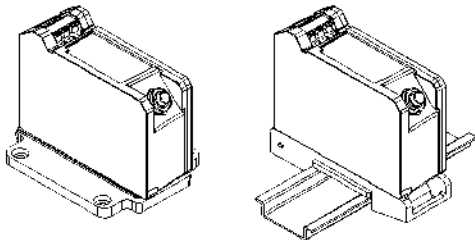


# 3300 5 mm Transducer System

## Datasheet

Bently Nevada Machinery Condition Monitoring

172036 Rev. M



## Description

### Transducer System

The 3300 5mm Proximity Transducer System consists of:

- a 3300 5mm probe <sup>1, 2</sup>
- a 3300 XL extension cable (ref 141194-01)
- a 3300 XL Proximitor Sensor <sup>3, 4, 5</sup> (ref 141194-01)

When combined with a 3300 XL Proximitor Sensor and XL extension cable, the system provides an output voltage that is directly proportional to the distance between the probe tip and the observed conductive surface. The system can measure both static (position) and dynamic (vibration) data. Its primary use is in vibration and position measurement applications on fluid-film bearing machines, as well as Keyphasor measurement and speed measurement applications<sup>6</sup>.

The system provides an accurate, stable signal output over a wide temperature range. All 3300 XL Proximity Transducer Systems achieve this level of performance with complete interchangeability of probe, extension cable, and Proximitor sensor, eliminating the need for individual component matching or bench calibration.

### Proximity Probe

The 3300 5 mm probe improves upon previous designs. A patented TipLoc molding method provides a more robust bond between the probe tip and the probe body. The 3300 5 mm system is orderable with Fluidloc cable options for preventing oil and other liquids from leaking out of the machine through the cable's interior.



## Connectors

The 3300 5mm probe and 3300 XL 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. The connectors require no special tools for installation or removal.

3300 5mm Probes and XL Extension Cables can be ordered with connector protectors already installed, or we can supply the connector protectors separately for installation in the field (such as when the cable must be run through restrictive conduit). We recommend connector protectors for all installations to provide increased environmental protection<sup>7</sup>.

### Notes:

1. A 5mm probe uses smaller physical packaging and provides the same linear range as a 3300 XL 8mm probe (ref 141194-01). The 5mm probe does not, however, reduce the sideview clearances or tip-to-tip spacing requirements as compared to an XL 8mm probe. Use the 5mm probe when physical (not electrical) constraints preclude the use of an 8mm probe, such as mounting between thrust bearing pads or other constrained spaces. When your application requires narrow sideview probes, use the 3300 XL NSv probe and extension cable with the 3300 XL NSv Proximitor Sensor (refer to Specifications and Ordering Information p/n 147385-01).
2. XL 8mm probes provide a thicker encapsulation of the probe coil in the molded PPS plastic probe tip to produce a more rugged probe. The larger diameter of the probe body also provides a stronger, more robust case. We recommend the use of XL 8mm probes when possible to provide optimal robustness against physical abuse.
3. A 3300 XL Proximitor Sensor is available and provides many improvements over the non-XL version. The XL sensor is electrically and mechanically interchangeable with the non-XL version. Although the packaging of the 3300 XL Proximitor Sensor differs from its predecessor, its design allows for the use of a 4-hole mounting base to fit it in the same 4-hole mounting pattern and to fit within the same mounting space specifications (when the application observes the minimum permissible cable bend radius). Consult Specifications and Ordering Information (p/n 141194-01) or our sales and service professional for more information.
4. Use of XL components with 3300 5mm Probes will limit system performance to the specifications for the non-XL 3300 system.
5. The factory supplies Proximitor Sensors that are calibrated by default to AISI 4140 steel. Calibration to other target materials is available upon request.
6. When using this transducer system for tachometer or over-speed measurements, consult [Bently.com](http://Bently.com) for the application note regarding the use of eddy current proximity probes for over-speed protection.
7. We provide silicone tape with each 3300 XL extension cable. Use this tape instead of connector protectors. We do not recommend silicone tape in applications which will expose the probe-to-extension cable connection 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 kΩ load, an AISI 4140 steel target, and a probe gapped at 1.27mm (50 mils).


### Electrical

XL Proximitor Sensor Input	Accepts one noncontacting 3300 5mm Proximity Probe and XL 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

Probe DC Resistance	
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

Extension Cable DC Resistance		
Length of Extension Cable	Resistance from Center Conductor to Center Conductor (R <sub>CORE</sub> ) (Ω)	Resistance from Outer Conductor to Outer Conductor (R <sub>JACKET</sub> ) (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

Extension Cable DC Resistance		
Length of Extension Cable	Resistance from Center Conductor to Center Conductor (R <sub>CORE</sub> ) (Ω)	Resistance from Outer Conductor to Outer Conductor (R <sub>JACKET</sub> ) (Ω)
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

 Outer conductor refers to the shielded conductor that is attached to the connector, not the armor braid.

Extension Cable Capacitance	69.9 pF/m (21.3 pF/ft) typical.
Field Wiring	Recommend using 3-conductor shielded triad cable 0.2mm to 1.5mm (16 AWG to 24 AWG). 305 metres (1,000 feet) maximum length between 3300 XL Proximity Transducer and monitor. Consult Performance Specification, document 155687, for signal rolloff at high frequencies when using longer field wiring lengths or external safety barriers located some distance from the monitoring system.
Linear Range	2mm (80 mils). Linear range begins at approximately 0.25mm (10 mils) from target and is from 0.25 to 2.3mm (10 to 90 mils).
Recommended Gap Setting	1.27mm (50 mils).
Incremental Scale Factor	7.87 V/mm (200 mV/mil) ±6.5% typical, including interchangeability error when measured in increments of 0.25mm (10 mils) over the linear range.
Deviation from Best Fit Straight Line (DSL)	Less than ±0.038mm (±1.5 mil) typical deviation from best fit straight line.
Probe Temperature Stability (typical)	Over probe temperature range of -35 °C to +177 °C (-31 °F to +350 °F), the incremental scale factor remains within ±10% of 7.87 V/mm

	(200 mV/mil) and the deviation from the best fit straight line remains within $\pm 0.076\text{mm}$ ( $\pm 3$ mils).
Frequency Response	0 to 10 kHz: +0, -3 dB, with up to 305 metres (1000 feet) of field wiring.
Minimum Target Size	15.2mm (0.6 in) diameter (flat target)
<b>Shaft Diameter</b>	
Minimum	50.8mm (2 in)
Recommended minimum	76.2mm (3 in)

When gapped at the center of the linear range, the interaction between 2 separate transducer systems (cross-talk) will be less than 50 mV on shaft diameters of at least 50mm (2 in) or greater. Care should be taken to maintain minimum separation of transducer tips, generally at least 40mm (1.6 in) for axial position measurements or 38mm (1.5 in) for radial vibration measurements to limit cross-talk to 50 mV or less. Radial vibration or position measurements on shaft diameters smaller than 76.2mm (3in) will generally result in a change in scale factor. Consult Performance Specification 155687 for additional information.

## Effects of 60 Hz Magnetic Fields Up to 300 Gauss

Output Voltage in Mil (pk-pk)/Gauss (5-metre System)			
Gap	XL Proximator Sensor	Probe	XL Ext. Cable
10 mil	0.0119	0.0004	0.0004
50 mil	0.0131	0.0014	0.0014
90 mil	0.0133	0.0045	0.0045

## Electrical Certification

Complies with the European CE mark.

## Mechanical

Probe Tip Material	Polyphenylene sulfide (PPS)
Probe Case Material	AISI 303 or 304 stainless steel (SST)
Probe Cable	75Ω triaxial, fluoroethylene propylene (FEP) insulated probe cable in the following lengths: 0.5, 1, 2, 5, or 9 meters (1.6, 3.3, 16.4, or 29.5 feet)
System Length	5 or 9 meters (16.4 or 29.5 feet) including extension cable
Extension Cable Material	75 Ω triaxial, fluoroethylene propylene (FEP) insulated
Probe and Extension Cable Armor	Flexible AISI 302 or 304 SST with FEP outer jacket
5mm Probe Tensile Strength	222 N (50 lbf) probe case to probe lead. 222 N (50 lbf) probe lead to extension cable connectors
Connector material	Gold-plated brass or gold-plated beryllium copper

### Recommended case hole and tap size for 1/4-28 case

Drill Size	0.213in
Hole Size	0.218 to 0.222in
Hole Depth	0.376 to 0.750in
Tap Size	#3

### Recommended case hole and tap size for M8x1 case

Drill Size	7.5mm
Hole Size	7.625 to 7.72mm
Hole Depth	12 to 24mm
Tap Size	M8x1
Probe case torque	5.1 N·m (45in·lb) recommended 7.3 N·m (65 in·lb) maximum
Connector-to-connector torque	Refer to the table below: Recommended Torque
Maximum torque	0.565 N•m (0.42 ft•lbf)
Minimum Cable Bend Radius	25.4mm (1.0in)
<b>Weight</b>	
Total System	0.71kg (1.6 lb), typical
3300 5mm Probe	323 g (11.39 oz).
XL Extension Cable	34 g/m (0.4 oz/ft) 103 g/m (1.5 oz/ft) (armored)
XL Proximito Sensor	246g (8.7oz)

Recommended Torque	
Connector Type	Tightening Instructions
2 3300 XL gold "click" type connectors	Finger tight
1 non-XL stainless steel connector and 1 3300 XL connector	Finger tight plus 1/8 turn using pliers

## Environmental Limits

Probe Temperature Range	-35°C to +177°C (-31°F to +351°F)
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Exposing the probe to temperatures below -34°C (-30°F) may cause premature failure of the pressure seal.

Extension Cable Temperature Range	-51° C to +177° C (-60° F to +351° F) for standard extension cable. ref 141194-01
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### Probe Pressure

3300 5mm probes are designed to seal differential pressure between the probe tip and case. The probe sealing material consists of a fluorocarbon O-ring. We do not pressure test probes prior to shipment. Contact our custom design department if a test of the pressure seal for your application is required.



It is the responsibility of the customer or user to ensure that all liquids and gases are contained and safely controlled should a proximity probe leak. In addition, solutions with high or low pH values may erode the tip assembly of the probe causing media to leak into surrounding areas. Bently Nevada, LLC will not be held responsible for any damages resulting from leaking 3300 5 mm proximity probes. In addition, Bently Nevada, LLC will not replace 3300 5 mm proximity probes under the service plan due to probe leakage.

## Compliance and Certifications

### FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

### EMC

EN 61000-6-2

EN 61000-6-4

EMC Directive 2014/30/EU

### ATEX (where the applicable dash option has been ordered)

EN 60079-0

EN 60079-11

EN 60079-15

EN 60079-7

ATEX Directive 2014/34/EU

### RoHS

RoHS Directive 2011/65/EU

### Maritime

ABS 2009 Steel Vessels Rules

1-1-4/7.7,4-8-3/1.11.1,4-9-7/13

## Hazardous Area Approvals



For the detailed listing of country and product specific approvals, refer to the *Approvals Quick Reference Guide* (108M1756) available from [Bently.com](http://Bently.com).

### CSA/NRTL/C

#### 3300 XL Proximito Sensor

ia	Class I, Zone 0: Aex/Ex ia IIC T4/T5 Ga Class I, Groups A,B,C, and D, Class II, Groups E, F, and G, Class III
----	--

When installed with intrinsically safe zener barriers per drawing 141092 or when installed with galvanic isolators.

nA, ec	Class I, Zone 2: AEx/Ex nA IIC T4/T5 Gc Class I, Division 2, Groups A, B, C, and D Class I, Zone 2 AEx/Ex ec IIC T4/T5 Gc; Class I, Divison 2, Groups A, B, C, and D
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When installed without barriers per drawing 140979

T5 @ Ta = -55°C to +40°C

T4 @ Ta = -55°C to +80°C

#### 3300 XL Probe

ia	Class I, Zone 0: Aex/Ex ia IIC T5...T1 Ga Class I, Groups A,B,C, and D, Class II, Groups E, F, and G, Class III
----	--

When installed with intrinsically safe zener barriers per drawing 141092 or when installed with galvanic isolators. (See table below, Temperature Schedule)

nA, ec	Class I, Zone 2: AEx/Ex nA IIC T5...T1 Gc Class I, Division 2, Groups A, B, C, and D Class I, Zone 2 AEx/Ex ec IIC T5...T1 Gc; Class I, Divison 2, Groups A, B, C, and D
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When installed without barriers per drawing 140979 (See table below, Temperature Schedule)

## ATEX/IECEx

### 3300 XL Proximito Sensor

ia	Ex ia IIIC T90C/T105C Dc
	For EPL Dc: T105°C @ Ta = -55°C to 100°C T90°C @ Ta = -55°C to +85°C



Ex ia IIC T4/T5 Ga

Ui = -28V	Uo = -28V
Ii = 140mA	Io = 140mA
Pi = 0.91W	Po = 0.742W
Ci = 47nF	Co = 1.5nF
Li = 1460µH	Lo = 610µH
nA,ec	



Ex nA IIC T4/T5 Gc

Ex ec IIC T4/T5 Gc

Ui = -28V	Li = 140 Ma
	T5 @ Ta = -55° C to +40 °C
	T4 @ Ta = -55 °C to +80 °C

### 3300 XL Probe

Note: Probe entity parameters are met when used with BN extension cables and connected to BN Prox.

ia	Ex ia IIIC T90°C ... T280°C Dc
For EPL Dc: (see Table 5: Temperature Schedule)	



Ex ia IIC T5...T1 Ga, (see table below, Temperature Schedule)

Ui = -28V	
Ci = 1.5 nF	

Ii = 140 mA	
Li = 610 µH	
Pi = 0.91 W	
nA, ec	
II 3 G	
Ex nA IIC T5...T1 Gc, Ex ec IIC T5...T1 Gc, (see table below, Temperature Schedule).	
Ui = -28V	
Li = 140 mA	

The Prox must be installed so as to provide the terminals with a degree of protection of at least IP54.

Temperature Schedule	
Temperature Classification	Ambient Temperature (Probe Only)
For EPL Ga and Gc	
T1	-55°C to +232°C
T2	-55°C to +177°C
T3	-55°C to +120°C
T4	-55°C to +80°C
T5	-55°C to +40°C
For EPL Dc	
T280C @ Ta	-55°C to +232°C
T225C @ Ta	-55°C to +177°C
T170C @ Ta	-55°C to +120°C
T130C @ Ta	-55°C to +80°C
T90C @ Ta	-55°C to +40°C

## Hazardous Area Conditions of Safe Use

### Zone 0/1:

1. The exposed plastic surface of the Probes with 50 mm diameter, under certain extreme circumstances, may generate an ignition-capable level of electrostatic

charge. Therefore, this version of the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on the plastic surface. In addition, the equipment shall only be cleaned with a damp cloth. This is particularly important if the equipment is installed in a Zone 0 location.

2. The end user is to ensure appropriate earthing upon installation.

**Zone 2 :**

1. This product is not resistant to light as required by the relevant clause of EN 60079-0, therefore, it shall only be installed in a location where it is not exposed to direct sunlight or any other source of ultra-violet (UV) light.
2. The connector shall not be disconnected while the circuit is live unless the area is known to be non-hazardous.
3. The end user is to ensure appropriate earthing upon installation.



## Ordering Information



For the detailed listing of country and product specific approvals, refer to the *Approvals Quick Reference Guide* (108M1756) available from [Bently.com](http://Bently.com).

### 3300 5mm Proximity Probes

**330171 3300 5mm Probe, 1/4-28 UNF thread, without armor**

**330172 3300 5mm Probe, 1/4-28 UNF thread, with armor**

#### Part Number-AA-BB-CC-DD-EE

##### A: Unthreaded Length Option

**Note:** Unthreaded length must be at least 0.8 in. less than the case length. Order in increments of 0.1 in.

##### Length configurations:

Maximum unthreaded length:

**8 8** = 8.8 in.

Minimum unthreaded length:

**0 0** = 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 unthreaded length:

**9 6** = 9.6 in.

Minimum unthreaded length:

**0 8** = 0.8 in.

**Example: 2 4** = 2.4 in.

##### C: Total Length Option

<b>0 5</b>	0.5 meter (1.6 feet)
<b>1 0</b>	1.0 metre (3.3 feet)
<b>2 0</b>	2.0 metres (6.6 feet)
<b>5 0</b>	5.0 metres (16.4 feet) <sup>1</sup>
<b>9 0</b>	9.0 metres (29.5 feet)

##### D: Connector Option

<b>0 1</b>	Miniature coaxial ClickLoc connector with connector protector, standard cable
<b>0 2</b>	Miniature coaxial ClickLoc connector, standard cable
<b>1 1</b>	Miniature coaxial ClickLoc connector with connector protector, FluidLoc cable
<b>1 2</b>	Miniature coaxial ClickLoc connector, FluidLoc cable

##### E: Agency Approval Option

<b>0 0</b>	Agency Approval Option
<b>0 5</b>	Multiple Approvals

## 3300 5mm Proximity Probes, Metric

**3301733300 5mm Probe, M8 x 1 thread, without armor**

**3301743300 5mm Probe, M8 x 1 thread, with armor**

#### Part Number-AA-BB-CC-DD-EE

##### A: Unthreaded Length Option

**Note:** Unthreaded length must be at least 20mm less than the case length. Order in increments of 10mm.

##### Length configurations:

Maximum unthreaded length:

**2 3** = 230mm

Minimum unthreaded length:

**0 0** = 0.0mm

**Example: 0 6** = 60mm

##### B: Overall Case Length Option

Order in increments of 10mm

##### Metric thread configurations:

Maximum unthreaded length:

**2 5** = 250mm

Minimum unthreaded length:

**0 2** = 20mm

**Example: 0 6** = 60mm

##### C: Total Length Option

<b>0 5</b>	0.5 meter (1.6 feet)
<b>1 0</b>	1.0 metre (3.3 feet)
<b>2 0</b>	2.0 metres (6.6 feet)
<b>5 0</b>	5.0 metres (16.4 feet) <sup>1</sup>
<b>9 0</b>	9.0 metres (29.5 feet)

##### D: Connector Option

<b>0 1</b>	Miniature coaxial ClickLoc connector with connector protector, standard cable
<b>0 2</b>	Miniature coaxial ClickLoc connector, standard cable
<b>1 1</b>	Miniature coaxial ClickLoc connector with connector protector, FluidLoc cable
<b>1 2</b>	Miniature coaxial ClickLoc connector, FluidLoc cable

##### E: Agency Approval Option

<b>0 0</b>	Agency Approval Option
<b>0 5</b>	Multiple Approvals

## Ordering Information for Proximito Sensor

### 3300 XL Proximito Sensor

#### 330180-AA-BB

<b>A: Total Length and Mounting Option</b>	
<b>10</b>	1.0 meter (3.3 feet) system length, panel mount
<b>11</b>	1.0 meter (3.3 feet) system length, DIN mount
<b>12</b>	1.0 meter (3.3 feet) system length, no mounting hardware
<b>50</b>	5.0 meters (16.4 feet) system length, panel mount
<b>51</b>	5.0 meters (16.4 feet) system length, DIN mount
<b>52</b>	5.0 meters (16.4 feet) system length, no mounting hardware
<b>90</b>	9.0 meters (29.5 feet) system length, panel mount
<b>91</b>	9.0 meters (29.5 feet) system length, DIN mount
<b>92</b>	9.0 meters (29.5 feet) system length, no mounting hardware
<b>B: Agency Approval Option</b>	
<b>00</b>	Not required
<b>05</b>	CSA, ATEX, IECEx Approvals

## Probe Accessories

### Aluminum probe mounting bracket

The aluminum probe threaded mounting bracket is the standard mounting bracket for most 3300 5 mm probe installations. The -02 option is supplied with 2 10-24 UNC-2A mounting screws. The -03 option is supplied with 2 M5 x 0.8-6g mounting screws. The mounting screws have pre-drilled holes for safety wire.

### 137492 -AA

<b>A: Thread Size</b>	
<b>0 2</b>	1/4-28
<b>0 3</b>	M8 x 1

### Phenolic Probe Mounting Bracket

The phenolic mounting bracket is recommended if additional electric isolation from the mounting location is required (as in some generator and electrical motor bearing locations). The -02 option is supplied with 2 10-24 UNC-2A mounting screws. The -03 option is supplied with 2 M5 x 0.8-6g mounting screws. The mounting screws have pre-drilled holes for safety wire.

### 27474 -AA

<b>A: Thread Size</b>	
<b>0 2</b>	1/4-28
<b>0 3</b>	M8 x 1

## 75Ω ClickLoc Connector Kit

### 330153-AA

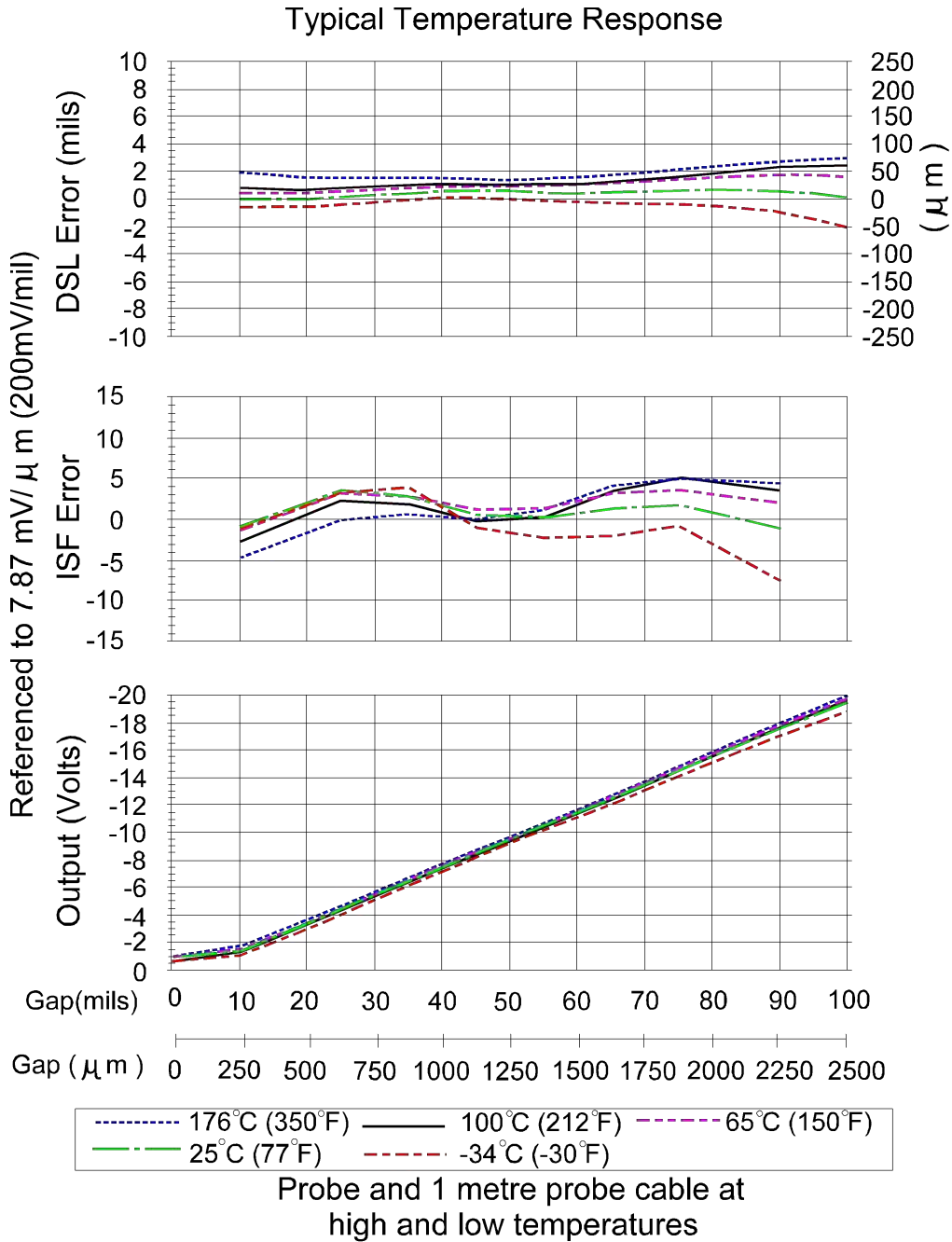
75Ω ClickLoc Connector Kit for 3300 series probes and extension cables. Each kit contains 1 color-coded sleeve per connector.

<b>A: Kit Type</b>	
<b>0 2</b>	1 ClickLoc male connector for 3300 XL 5mm and 8mm extension cable.
<b>0 3</b>	1 ClickLoc female connector for 3300 XL 5mm and 8mm extension cable.
<b>0 4</b>	1 ClickLoc male connector for 3300 5mm probe.

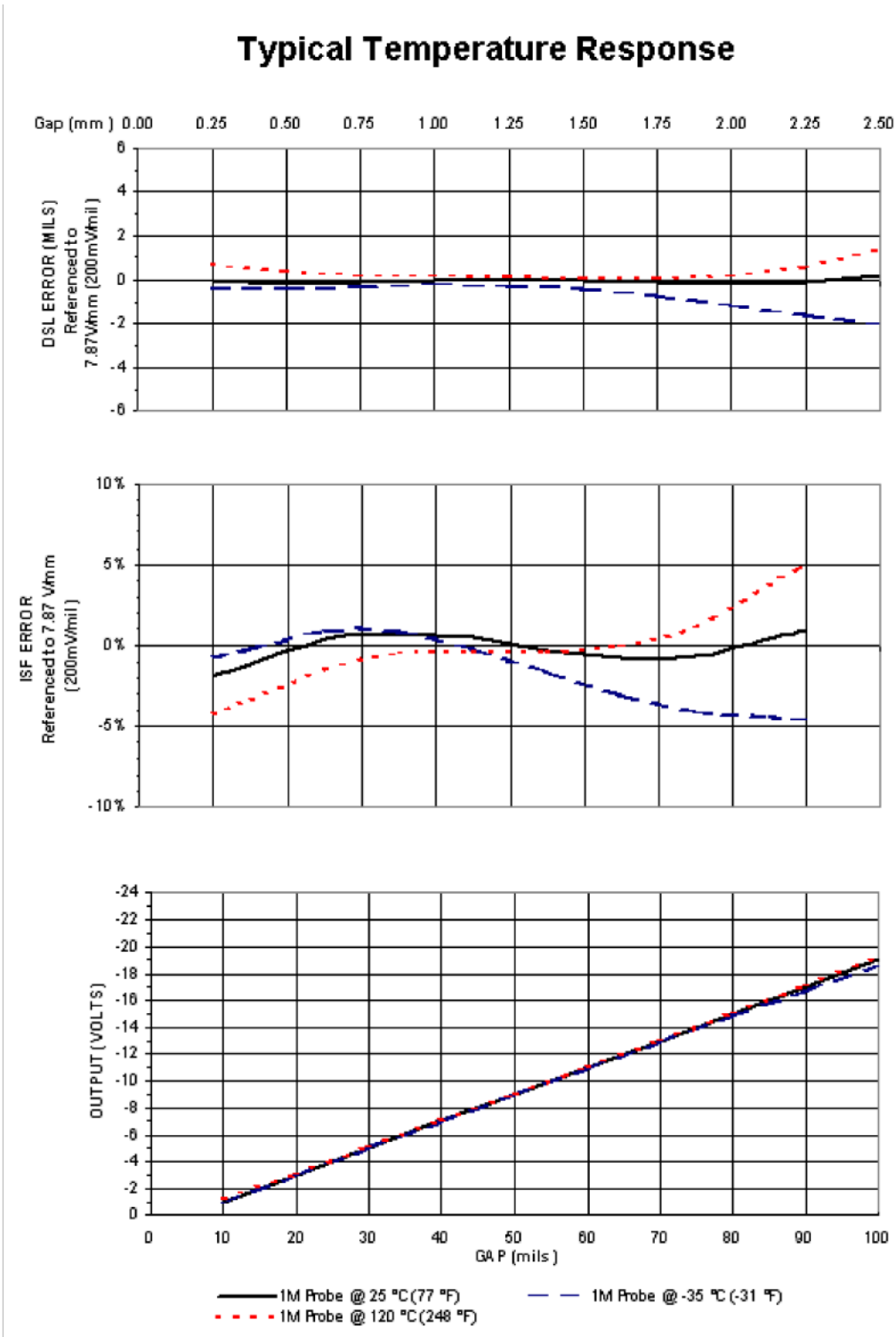
## Accessories

02120015	<p><b>Bulk field wire</b></p> <p>1.0mm<sup>2</sup> (18 AWG), 3-conductor, twisted, shielded cable for connections between Proximitor Sensor and monitor.</p>
03200006	<p><b>Silicone self-fusing tape</b></p> <p>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.</p>
40113-03	<p><b>Connector Protector Kit</b></p> <p>Connector Protector Kit for 3300 5mm probes, including connector protectors and installation tools.</p>
136536-01	<p><b>Connector Protector Adapter</b></p> <p>Makes connector protector kits purchased prior to 1998 compatible with ClickLoc extension cable connectors.</p>
40180-03	<p><b>Connector Protectors</b></p> <p>Package containing 10 pairs of 75Ω Coaxial Connector Protectors.</p>
03839410	<p><b>75Ω Triaxial/95 ohm Coaxial Male Connector Protector</b></p> <p>Placed onto the extension cable; attaches to the female connector protector on the 5 mm probe to provide environmental protection of connectors.</p>
03800001	<p><b>75Ω Coaxial Female Connector Protector</b></p> <p>Placed onto 3300 5mm probe leads; attaches to the male connector protector on the extension cable to provide environmental protection of connectors.</p>
163356	<p><b>Connector Crimp Tool Kit</b></p> <p>Includes 1 set of multi-connector inserts and connector installation instructions. Compatible only with 330153 connector kits or with probes shipped in 2003 or later with ClickLoc connectors uninstalled. Supplied with carrying case.</p>

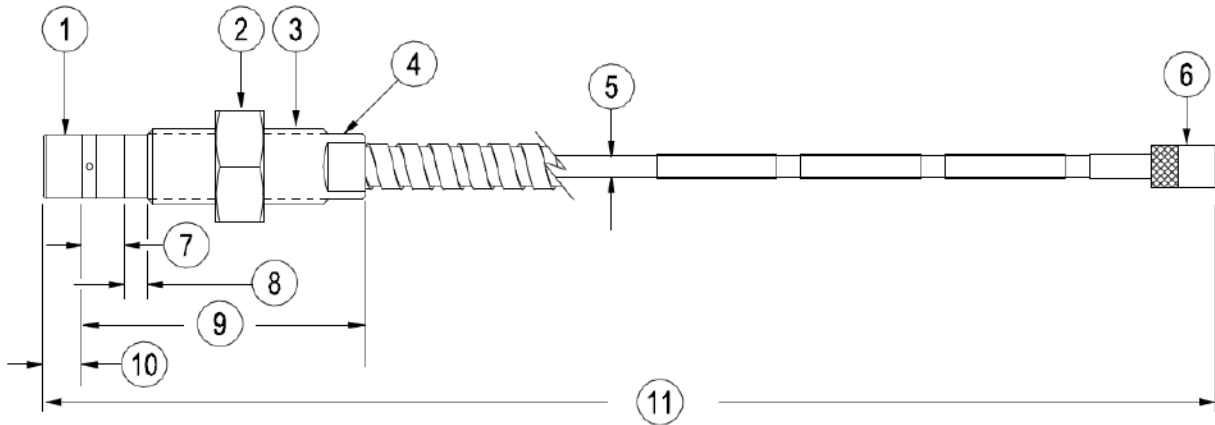
## Graphs and Figures



**Figure 1: Typical 3300 5mm Probe and 1 Metre of Cable at High and Low Temperatures (XL Proximitor Sensor and XL Extension Cable are at 25°C)**



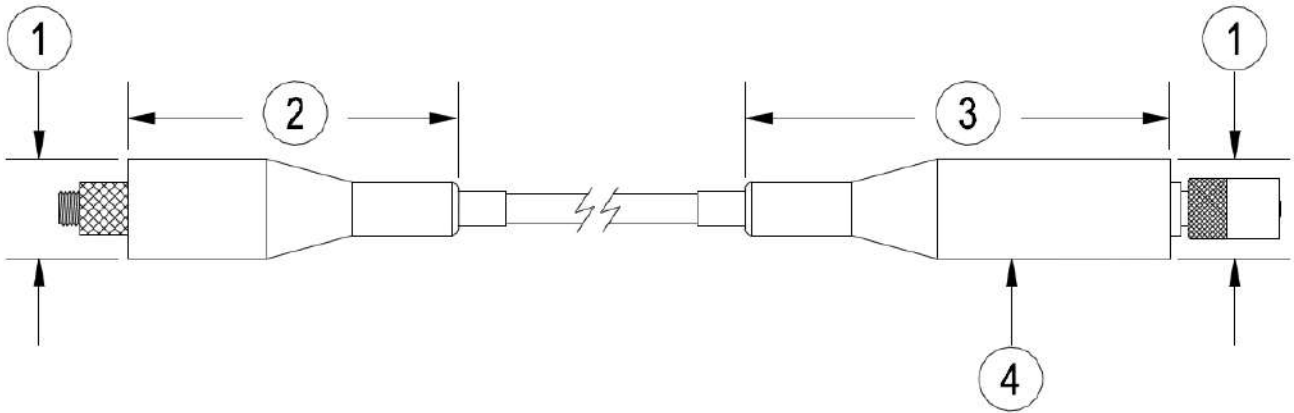
**Figure 2: 3300 5 Meter XL Proximity Sensor at High Temperatures (3300 5mm Probe and XL Extension Cable at 25°C)**



1. Probe tip, 5.2mm [0.21 in] diameter
2. 11.1 mm [7/16in] for 1/4-28 threads, 13.0mm [0.51in] for M8 thread. See Note 3.
3. Case thread
4. 5.6 [7/32] wrench flats for 1/4-28 threads, 7.0 [0.28] for M8 threads
5. 75Ω cable, 2.8mm [0.11 in] maximum outside diameter, 7.6mm [0.3 in] outside diameter of armor, 9.0mm [0.35in] maximum diameter of armor ferrule.
6. Miniature male coaxial connector, 7.23mm [0.285 in] maximum outside diameter "D"
7. 3.2 [0.13in]
8. Unthreaded length "A"
9. Case length "B"
10. 6.0mm [0.235in] maximum
11. Total length "C", =30%, -0%. See Note.

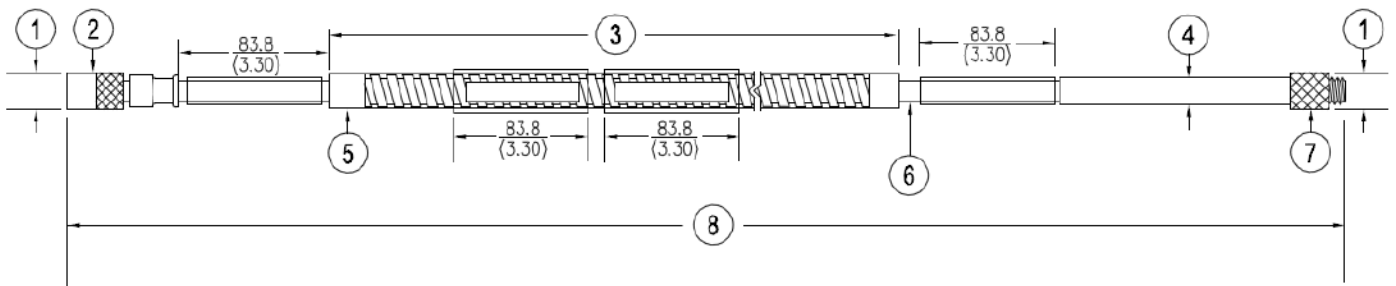
**Figure 3: 3300 5mm Proximity Probes, Standard Mount**

- 330171, 1/4-28 UNF-2A, without armor<sup>7</sup>
- 330172, 1/4-28 UNF-2A, with armor<sup>6</sup>
- 330173, M8X1 thread, without armor<sup>7</sup>
- 330174, M8X1 thread, with armor<sup>6</sup>



1. 12mm [0.40in] maximum diameter
2. 36.3mm [1.43in] maximum
3. 51.1mm [2.0in] maximum
4. Connector protector (fluorosilicone material)

**Figure 4: Installed Connector Protectors**



1. 7.2mm [0.25 in] maximum diameter
2. Miniature male coaxial connector
3. FEP or PFA coated armor. Armor length is 300mm [11.8in] less than cable length. See Note 5.
4. 75Ω cable, 3.7mm [0.15 in] maximum outside diameter, 3.9mm [0.16in] maximum diameter for FluidLoc cable, 7.6mm [0.30in] maximum outside diameter or armor, 9.0mm [0.35in] maximum diameter of armor ferrule.
5. Stainless steel ferrules, 8.4mm [0.33in] diameter
6. Miniature female coaxial connector
7. Cable length, +20%, -0%

**Figure 5: 3300 XL Extension Cable**

330130, 3300 XL Extension Cable (FEP armor and insulation)

**Notes:**

1. All dimensions are in millimetres (inches) unless otherwise noted.
2. Standard mount 5mm probes supplied with 13 mm or 7/16-in lock nut.
3. Letters inside quotation marks refer to probe ordering options.

**Notes:**

4. Stainless steel armor is supplied with FEP outer jacket for standard probes, PFA outer jacket for ETR probes.
5. FEP jacket is standard non-armored portion of the cable for standard probes, PFA jacket on non-armored portion for ETR probes.
6. Probes ordered with 5 or 9 meter integral cables have a length tolerance of +20%, -0%.
7. Five meter probes are designed for use with the five meter Proximity Sensor only.



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1631 Bently Parkway South, Minden, Nevada USA 89423  
Phone: 1.775.782.3611 or 1.800.227.5514 (US only)  
[Bentley.com](https://www.bentley.com)