Specifications

Unless otherwise noted, the following specifications are for a a 3300 16 mm HTPS Proximitor® Sensor, matched extension cable and probe at 22 +4.4°C (72 +8°F), with a -24 Vdc power supply, a 10 kΩ load, a Bently Nevada 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 a Bently Nevada AISI 4140 steel target.

Electrical

Proximitor Sensor Input

Accepts one noncontacting 3300 HTPS 16 mm Proximity Probe with matched Extension Cable.

Power

Requires -19.6 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 13 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 (RpROBE) (°hms)
1.0	5.06
2.0	5.82
5.0	8.11

Extension cable dc resistance:

Length of Extension Cable (m)	Resistance from CenterConductor to Center Conductor (^{R}CORE) (ohms)	Resistance from Coaxial Conductor to Coaxial Conductor (^{R}JACKET) (ohms)
4.0	0.88	0.26
7.0	1.62	0.49
8.0	1.84	0.55

Extension cable capacitance:

69.9 pF/m (21.3 pF/ft) typical

Field wiring:

Maximum length of 305 metres (1,000 feet) between the 3300 HTPS 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 -2 to -18 Vdc).

Recommended Gap Setting:

2.5 mm (100 mils)

Incremental Scale Factor (ISF)

3.94 V/mm (100 mV/mil) ±9.65% 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)

Less than ±78 |xm (±3.1 mils).

System performance over extended temperatures:

Over a probe temperature range of 22°Cto+350°C (72°Fto+662°F) the ISF remains within ±30% of 3.94 V/mm (100 mV/mil), the DSL remains within ±0.51 mm (±20 mils).

Frequency Response:

0 to 6 kHz: +0, -3 dB typical, with up to 305 metres (1000 feet) of field wiring.

Recommended Minimum Target Size:

30.5 mm (1.2 in) diameter (flat target)

Recommended Minimum Shaft Diameter

152 mm (6.0 in)

Note: Measurements on shaft diameters smaller than 76 mm (3.0 in) usually require close spacing of radial vibration or axial position transducers with the potential for their electromagnetic emitted fields to interact with one another (cross talk), resulting in erroneous readings. Care should be taken to maintain minimum separation of transducer tips, generally at least 64 mm (2.5 in) for dual axial position measurements or 54 mm (2.1 in) for radial vibration measurements to prevent cross talk. Radial vibration or position measurements on shaft diameters smaller than 152 mm (6.0 in) will generally result in a change in scale factor due to the curvature of the shaft surface. Consult Performance Specification 159132 for additional information.

Effects of 60 Hz Magnetic Fields Up to 300 Gauss:

Output voltage in mil pp/gauss:

Gap	Proximitor Sensor	Probe	Ext. Cable
0.5 mm (20 mil)	0.0020	0.0030	0.0011
2.5 mm (100 mil)	0.0042	0.0034	0.0046
4.5 mm (180 mil)	0.0096	0.0070	0.0157

Electrical Classification:

Complies with the European CE mark.

Hazardous Area Approvals

Not available.

Mechanical

Probe Tip Material:

Ceramic

Probe Case Material:

AISI 316L stainless steel (SST).

Probe Cable:

1, 2 or 5 metre length of AISI 304L SST hardline cable.

Extension Cable Material:

75 Q triaxial, fluoroethylene propylene (FEP) insulated.

Proximitor Sensor Material:

Aluminum with epoxy powder coat finish.

System Length:

9 metres including extension cable

Extension Cable Armor (optional):

Flexible AISI 302 SST with FEP outer jacket.

Tensile Strength (maximum rated):

289 N (65 pounds) probe to extension cable.

Connector material:

Stainless steel

Probe case torque (maximum rated):

81 N.m (720 in.lb)

Connector-to-connector torque

Recommended torque:

Finger tight + 1/8 turn

Maximum torque:

0.565 N.m (5 in.lb)

Minimum Bend Radius (with or without sst armor):

25.4 mm (1.0 in)

System Weight (typical):

Probe:

117 g/m (1.26 oz/ft) of hardline cable + 12 g/cm (1.07 oz/in) of case

Extension Cable:

45 g/m (0.5 oz/ft)

Armored Extension cable:

140 g/m (1.5 oz/ft)

Proximitor Sensor:

255 g (9 oz)

Environmental Limit:

Probe Temperature Range

Operating and Storage Temperature:

-34°C to+350°C (-30°F to +662°F)

Extension Cable Temperature Range

Operating and Storage Temperature:

-5°C to +177°C (-60°F to +351 °F)

Proximitor Sensor Temperature Range

Operating Temperature:

-5°C to +100°C (-60°F to +212°F)

Storage Temperature:

-5°C to +105°C (-60°F to +221 °F)

Probe Relative Humidity:

100% condensing, submersible when connectors are protected.

Extension Cable and Proximitor Sensor Relative Humidity:

100% condensing, non-submerged when connectors are protected.

Probe Pressure:

3300 high temperature probes are designed to seal differential pressure between the probe tip and case. 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 Corporation will not be held responsible for any damages resulting from leaking 3300 high temperature proximity probes. In addition, 3300 high temperature proximity probes will not be replaced under the service plan due to probe leakage.

Patents:

5,126,664

Components or procedures described in this patent apply to this product.

Ordering Information

3300 High Temperature Probe, 3/4-16 UNF threads:

330301-AXXX-BXXX-CXX-DXX-EXX-FXX

A: Unthreaded Length Option:

Note: Unthreaded length must be at least 1.1 inch less than the case length.

Order in increments of 0.1 in
Length configurations:
Maximum unthreaded length: 5.4 in
Minimum unthreaded length: 0.0 in
Example: 0 1 2 = 1.2 in

B: Overall Case Length Option:

Order in increments of 0.1 in
Threaded length configurations:
Maximum case length: 6.5 in
Minimum case length: 1.1 in
Example: 0 6 0 = 6.0 in

C: Hardline Length Option:

1 0	1.0 metre (3.3 feet)
2 0	2.0 metres (6.6 feet)
5 0	5.0 metres (16.4 feet)

D: Total Length Option:

Note: Extension cable is included with the proximity probe.

9 0	9.0 metres (30 feet)

E: Extension Cable Armor Option:

0 0	Without stainless steel armor
0 1	With stainless steel armor

F: Agency Approval Option:

0 0	Not required

3300 High Temperature Probe, M18 x 1.5 threads:

330302-AXXX-BXXX-CXX-DXX-EXX-FXX

A: Unthreaded Length Option:

Note: Unthreaded length must be at least 30 mm less than the case length.
Order in increments of 10 mm
Length configurations:
Maximum unthreaded length: 130mm
Minimum unthreaded length: 0.0 mm
Example: 0 5 0 = 50 mm

B: Overall Case Length Option:

Order in increments of 10 mm
Threaded length configurations:
Maximum case length: 160 mm
Minimum case length: 30 mm
Example: 1 30 = 130 mm

C: Hardline Length Option:

1 0	1.0 metre (3.3 feet)
2 0	2.0 metres (6.6 feet)
5 0	5.0 metres (16.4 feet)

D: Total Length Option:

Note: Extension cable is included with the proximity probe.

9 0	9.0 metres (30 feet)