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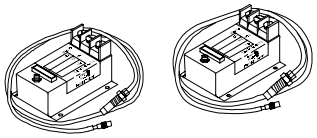
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Specifications and Ordering Information

7200 Proximity Transducer Systems

11 mm and 14 mm



Description

The 7200 11mm and 14mm Proximity Transducer Systems are non-contacting, gap-to-voltage transducer systems that measure static as well as dynamic distances between the probe tip and the observed target. Although these systems are designed to measure radial vibration and axial thrust motion on large machine rotors, they can be applied to any application that requires an accurate, reliable, non-contacting displacement measurement. The most common applications of these systems are shaft position, rod drop, and vibration measurements on rotating and reciprocating machinery.

A system consists of a probe with integral coaxial cable, an extension cable, and Proximitor® Sensor. All 7200 proximity transducer systems are compatible with 3300 and 3500 Monitoring Systems. The following types of measurements can be made:

- Radial vibration for indicating bearing condition and such machine malfunctions as rotor imbalance, misalignment and shaft crack.
- Axial thrust position for determining thrust bearing wear or potential bearing failure.
- Shaft average radial position for determining attitude angle, an indicator of rotor stability and shaft alignment.
- Vibration amplitude and phase angle for plotting diagnostic information in Polar and Bode formats or for Vector Monitoring.
- Eccentricity to measure the amount of shaft bow during startups of large turbine machine trains.
- Keyphasor® signals for measuring shaft rotative speed and phase angle
- Rod Drop measurements on reciprocating compressors to determine the amount of rider band wear.

The 11 mm probes are constructed of fiberglass. The 14mm probes are constructed of a high performance plastic capable of withstanding unusually harsh, wet and/or chemical environments. Both transducers are suitable for use in a confined space.

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 proximity probes. In addition, proximity probes will not be replaced under the service plan due to probe leakage.

Solutions with high or low pH values may erode the tip assembly of the probe causing media leakage into surrounding areas. **Bently Nevada will not be held responsible for any damages resulting from leaking proximity probes.** In addition, proximity probes will **not** be replaced under the service plan due to probe leakage.

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The combination of a probe with an integral lead and an extension cable is designed to achieve a system length of either five or nine metres from probe tip to Proximitor® Sensor. Probes are available with integral leads of various lengths. Leads under five metres require an extension cable.

All probes with five or nine metre leads connect directly to the Proximitor® Sensor, eliminating the need for an extension cable. A three-conductor, shielded cable is available to provide the signal output and power source input between the transducer system and Bently Nevada monitors. Proximitor® Sensors can be placed up to 305 metres (1,000 feet) from standard Bently Nevada monitors for signal connections.

Specifications

Specifications were determined with a -24 Vdc power supply, 10 k Ω load, and an AISI 4140 steel target at +22°C (+72°F).

Input

Power requirement: -18 Vdc to -24 Vdc at 13 mA maximum.

Leadwire Length: 304.8 metres (1,000 feet) maximum between Proximitor® sensor and monitor. Consult manual for frequency roll-off at longer lengths.

Outputs

Calibrated Range

11 mm

Linear Range: 4.06 mm (160 mils). Linear range begins at approximately 1.02 mm (40 mils) from target and is from 1.02 to 5.08 mm (40 to 200 mils).

Recommended Gap Setting: 3.05 mm (120 mils).

14 mm

Linear Range: 4.06 mm (160 mils). Linear range begins at approximately 0.508 mm (20 mils) from target and is from 0.508 to 4.57 mm (20 to 180 mils).

Recommended Gap Setting: 2.54 mm (100 mils).

Incremental Scale Factor: 3.94 mV/µm (100 mV/mil) ±16% including interchangeability error when measured in increments of 0.508 mm (20 mils) over the linear range.

Linearity: Less than ±165 µm (±6.5 mil) deviation from best fit straight line.

Frequency Response: 0 to 10 kHz +0,-3dB with up to 305 metres (1000 ft) of field wiring.

Temperature Sensitivity

11 mm: Typically ±5% of full-scale change at +65.6°C (+150°F) at 3.05 mm (120 mils) gap.

14 mm: Typically ±5% of full-scale change at +65.6°C (+150°F) at 2.54 mm (100 mils) gap.

Minimum Target Diameter 33.0 mm (1.3 in)

Environmental Limits

Operating Temperature

Proximitor® sensor: -51.1°C to +100°C (-60°F to +212°F).

Probe and Extension Cable: -34.4°C to +177°C (-30°F to +350°F).

Relative Humidity

11 mm: Up to 95% noncondensing.

14 mm: 100%, condensing, non-submersible when connectors are protected.

System Weight: 0.59 kg (1.3 lbs.).

Note: Contact your nearest Bently Nevada sales representative regarding transducer operation in a radiation environment.

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Ordering Information

7200 11 mm Standard Mount Proximity Probes, English:

19048 ½-20 UNF thread, ¾ inch jam nut, 7/16 inch wrench flats, without armor.
BA19048 ½-20 UNF thread, ¾ inch jam nut, 7/16 inch wrench flats, without armor, European approvals.
CA19048 ½-20 UNF thread, ¾ inch jam nut, 7/16 inch wrench flats, without armor, North American approvals.
24798 ½-20 UNF thread, ¾ inch jam nut, 7/16 inch wrench flats, with armor.
BA24798 ½-20 UNF thread, ¾ inch jam nut, 7/16 inch wrench flats, with armor, European approvals.
CA24798 ½-20 UNF thread, ¾ inch jam nut, 7/16 inch wrench flats, with armor, North American approvals.

Part Number-AA-BB-CC-DD

Option Descriptions

A: Unthreaded Length Option

Note: Order in increments of 0.5 inches.
Length configurations:
Maximum: 8.0 in = **8 0**
Minimum: 0.0 in = **0 0**
Example: 0 5 = 0.5 inches

B: Overall Case Length Option

Note: Order in increments of 0.5 inches.
Overall length configurations:
Maximum: 6.5 in = **6 5** (for C = **05**)
9.5 in = **9 5** (for all other C options)
Minimum: 1.0 in = **1 0**
Example: 2 5 = 2.5 inches

C: Total Length Option

0 5 0.5 metres ±0.15 metres (20 inches ±6 inches).
1 0 1.0 metres ±0.15 metres (39 inches ±6 inches).
5 0 5.0 metres ±0.5 metres (197 inches ±20 inches).
9 0 9.0 metres ±0.9 metres (354 inches ±35 inches).

D: Connector Option

0 0 Without connector
0 2 With miniature male coaxial connector

7200 11 mm Standard Mount Proximity Probes, Metric:

26179 M14x1.5 thread, 22 mm jam nut, 12 mm wrench flats, without armor.
BA26179 M14x1.5 thread, 22 mm jam nut, 12 mm wrench flats, without armor, European approvals.
CA26179 M14x1.5 thread, 22 mm jam nut, 12 mm wrench flats, without armor, North American approvals.
26180 M14x1.5 thread, 22 mm jam nut, 12 mm wrench flats, with armor.
BA26180 M14x1.5 thread, 22 mm jam nut, 12 mm wrench flats, with armor, European approvals.
CA26180 M14x1.5 thread, 22 mm jam nut, 12 mm wrench flats, with armor, North American approvals.

Part Number-AA-BB-CC-DD

Option Descriptions

A: Unthreaded Length Option

Note: Order in increments of 10 mm.

Length configurations:
Maximum: 210 mm = **2 1**
Minimum: 0 mm = **0 0**

Example: 0 5 = 50 mm

B: Overall Case Length Option

Note: Order in increments of 10 mm.

Overall length configurations:
Maximum: 240 mm = **2 4**
Minimum: 30 mm = **0 3**

Example: 0 5 = 50 mm

C: Total Length Option

0 5 0.5 metres ±0.15 metres (20 inches ±6 inches).
1 0 1.0 metres ±0.15 metres (39 inches ±6 inches).
5 0 5.0 metres ±0.5 metres (197 inches ±20 inches).
9 0 9.0 metres ±0.9 metres (354 inches ±35 inches).

D: Connector Option

0 0 Without connector
0 2 With miniature male coaxial connector

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11 mm Reverse Mount Probe, Without Armor

29776 No approvals
BA29776 European approvals
CA29776 North American approvals

Part Number-AA-BB

Option Descriptions

A: Total Length Option
- **0 5** 0.5 metres ±0.15 metres (20 inches ±6 inches).
- **1 0** 1.0 metres ±0.15 metres (39 inches ±6 inches).
- **5 0** 5.0 metres ±0.5 metres (197 inches ±20 inches)
- **9 0** 9.0 metres ±0.9 metres (354 inches ±35 inches).

B: Connector Option
- **0 0** Without connector.
- **0 2** With miniature male coaxial connector.

11 mm Proximitor® Sensor

19049 No approvals
BA19049 European approvals
CA19049 North American approvals

Part Number-AA

Option Description

A: System Length Option (Combined length of probe and extension cable)
- **0 3** 5 metres (16.4 feet).
- **0 4** 9 metres (29.5 feet).

Extension Cable, 11 mm

24710 No approvals
BA24710 European approvals

Part Number-AAA-BB

Option Descriptions

A: Cable Length Option (Electrical length)
- **0 4 0** 4.00 metres (157 in)
- **0 4 5** 4.50 metres (177 in)
- **0 8 0** 8.00 metres (315 in)
- **0 8 5** 8.50 metres (335 in)

Note: Options -040 and -045 are for use with the **19049-03** five metre Proximitor® Sensor only.

B: Armor Option
- **0 0** Without armor
- **0 1** With armor

14 mm Standard Mount Probes, English

81723 5/8-18 UNF thread, 15/16 inch jam nut, 9/16 inch wrench flats, without armor.
CA81723 5/8-18 UNF thread, 15/16 inch jam nut, 9/16 inch wrench flats, without armor, North American approvals.
83936 5/8-18 UNF thread, 15/16 inch jam nut, 9/16 inch wrench flats, with armor.
CA83936 5/8-18 UNF thread, 15/16 inch jam nut, 9/16 inch wrench flats, with armor, North American approvals.

Part Number-AA-BB-CC-DD

Option Descriptions

A: Unthreaded Length Option

Note: Order in increments of 0.5 inches.

Length configurations:
Maximum: 8.7 in = **8 7**
Minimum: 0.0 in = **0 0**

Example: 0 5 = 0.5 inches

B: Overall Case Length Option

Note: Order in increments of 0.5 inches.

Overall length configurations:
Maximum: 9.5 in = **9 5**
Minimum: 1.0 in = **1 0**

Example: 2 5 = 2.5 inches

C: Total Length Option
- **1 0** 1.0 metres +0.2 metres, -0 metres (39.4 inches +7.9 inches, -0 inches).
- **5 0** 5.0 metres ±0.5 metres (197 inches ±20 inches).
- **9 0** 9.0 metres ±0.9 metres (354 inches ±35 inches).

D: Connector Option
- **0 0** Without connector
- **0 2** With miniature male coaxial connector

Note: Extension cable physical length equals the electrical length, +15%, -10%.

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14 mm Standard Mount Probe, Metric

81724 M16x1.5 thread, 24 mm jam nut, 12 mm wrench flats, without armor.
CA81724 M16x1.5 thread, 24 mm jam nut, 12 mm wrench flats, without armor, North American approvals.

Part Number-AA-BB-CC-DD

Option Descriptions

A: Unthreaded Length Option

Note: Order in increments of 10 mm.

Length configurations:
Maximum: 210 mm = **2 1**
Minimum: 0.0 mm = **0 0**

Example: 0 5 = 50 mm

B: Overall Case Length Option

Note: Order in increments of 10 mm.

Overall length configurations:
Maximum: 240 mm = **2 4**
Minimum: 30 mm = **0 3**

Example: 0 5 = 50 mm

C: Total Length Option

1 0 1.0 metres +0.2 metres, -0 metres (39.4 inches +7.9 inches, -0 inches).
5 0 5.0 metres ±0.5 metres (197 inches ±20 inches).
9 0 9.0 metres ±0.9 metres (354 inches ±35 inches).

D: Connector Option

0 0 Without connector
0 2 With miniature male coaxial connector

14 mm Proximitor® Sensor

81725 No approvals
CA81725 North American approvals

Part Number-AA

Option Description

A: System Length Option (Combined length of probe and extension cable)

0 1 5 metres (16.4 feet).
0 2 9 metres (29.5 feet).

Extension Cable, 14 mm

81305-AAA-BB

Option Descriptions

A: Cable Length Option

0 4 0 4.01 metres (158 in), ±10%
0 8 0 8.03 metres (316 in), ±10%
Note: Option -0 4 0 is for use only with the **81725-01** five metre Proximitor® Sensor.

B: Armor Option

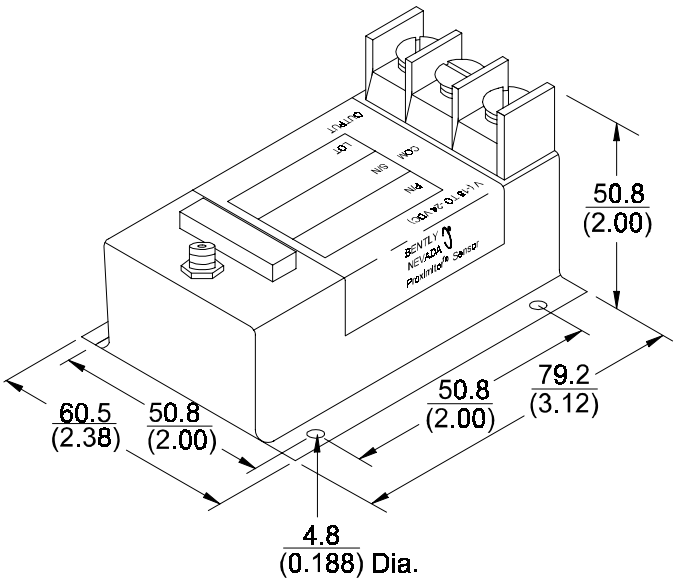
0 0 Without armor
0 1 With armor.

Note: Minimum bend radius is 25.4 mm (1.00 in) without armor and 38.1 mm (1.50 in) with armor.

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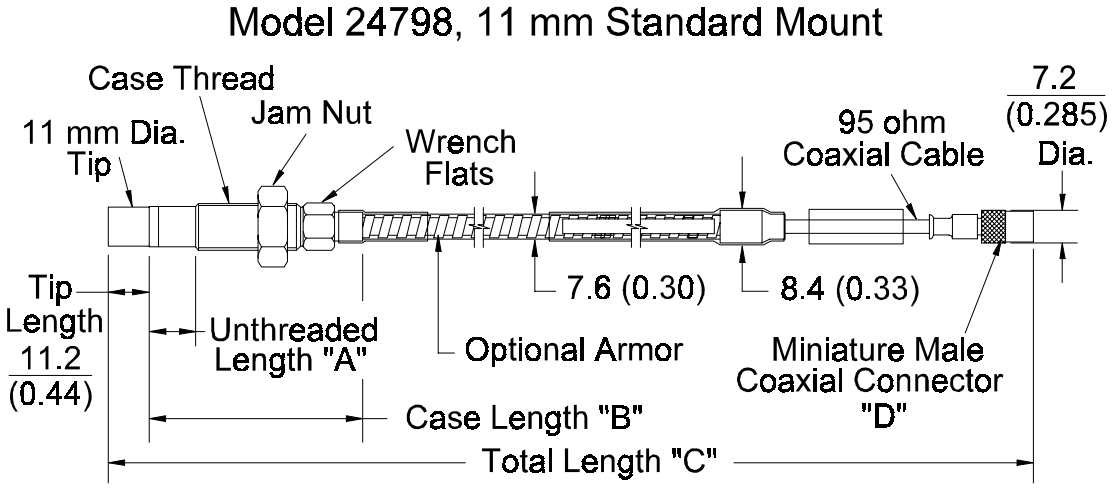
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Dimensional Drawing



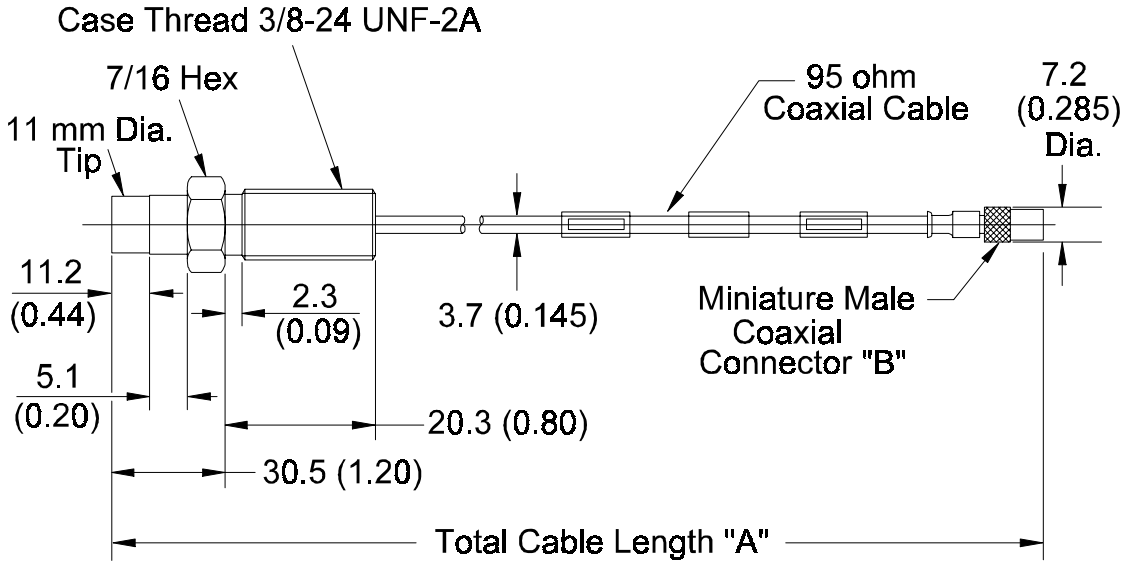
Dimensional drawing for the 11 and 14 mm Proximitors

Dimensional Cable Drawings

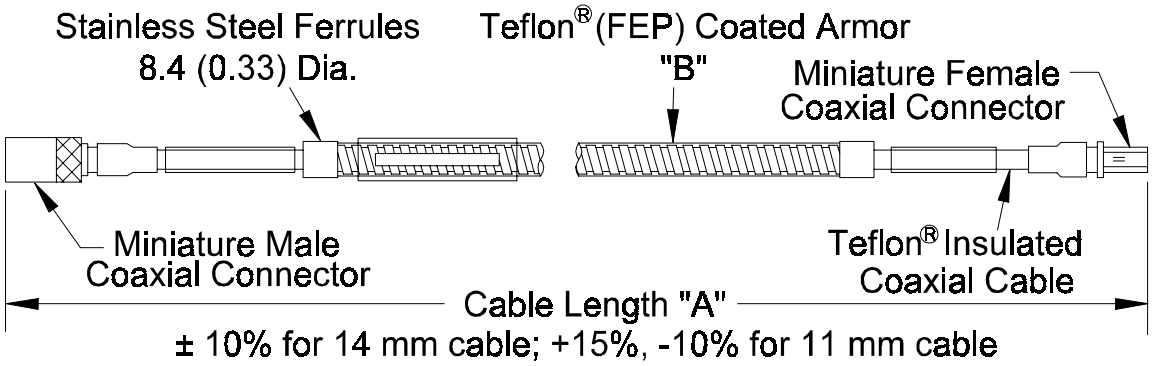


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Model 29776, 11 mm Reverse Mount

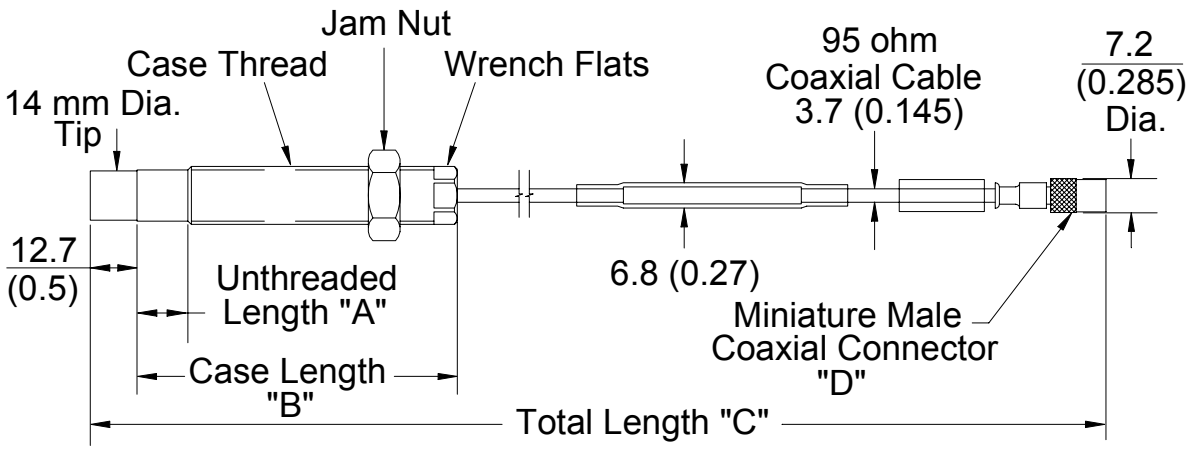


Dimensions, 11 mm and 14 mm Extension Cables



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14 mm Probe Configuration
Standard Mount



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