

Bently Nevada 330103-01-07-05-02-00

Bently Nevada 330103-01-07-05-02-00 is an unarmored M10 x 1 proximity probe with a 0.5 m standard lead. It measures shaft-relative vibration and position through a matched 3300 XL 8 mm transducer system.

Read the selected execution

Base 330103	Standard-mount M10 x 1 probe; no armor
AA = 01 / BB = 07	Metric case selections retained in the full identifier
CC = 05	0.5 m electrical probe length
DD = 02	Standard miniature ClickLoc; no protector
EE = 00	Agency approval not required

System position

Target Conductive shaft surface	Probe 330103 sensing element	Proximator Conditioned voltage to monitor
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Electrical-length pairing

5 m sensor	0.5 m probe + 4.5 m extension
9 m sensor	0.5 m probe + 8.5 m extension

Measurement roles

The completed transducer chain measures static target position and dynamic shaft-relative vibration. It can also supply speed and Keyphasor references when the target and monitor application are configured for that purpose. The different signal uses do not change this probe into an accelerometer.

Approval boundary

The final -00 code denotes approval not required. A family datasheet that includes hazardous-area versions does not confer those approvals on this ordered probe.

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02 / SIGNAL CHARACTERISTICS

Probe and matched-system data

Probe resistance	7.45 +/- 0.50 ohm, center to outer conductor
Cable impedance	75 ohm triaxial
Cable insulation	FEP, standard execution
Nominal scale factor	7.87 V/mm (200 mV/mil), matched system
Radial gap voltage	-9 VDC nominal
Linear range	2 mm; approximately -1 to -17 VDC
System bandwidth	DC to 10 kHz, +0 / -3 dB
Sensor output resistance	50 ohm
Sensor maximum consumption	12 mA

Reference conditions

The performance basis uses a complete 3300 XL 8 mm probe, extension where required and Proximitior Sensor, an AISI 4140 steel target, a -24 VDC supply and a 10 kohm load, with components between +18 and +27 deg C unless stated otherwise. Target material, temperature and the assembled electrical length affect the achieved calibration. A probe alone does not generate the conditioned monitor voltage.

Sensor power belongs to the conditioning stage

Non-incendive circuit	-17.5 to -26 VDC; installed per drawing 140979
Barrier arrangement	-23 to -26 VDC
More positive than -23.5 VDC	May reduce the usable linear range
Supply sensitivity	Less than 2 mV output change per volt of supply change

Field circuit

The Proximitior-to-monitor circuit is separate from the probe electrical length. The datasheet recommends a three-conductor shielded triad and tinned field wiring; its documented frequency-response curves show the effect of longer monitor wiring. Check the relevant curve before accepting a high-frequency channel.

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03 / HARDWARE AND SERVICE LIMITS

Construction by component

Tip	Polyphenylene sulfide (PPS)
Case	AISI 303 or 304 stainless steel
Connector	Gold-plated brass or beryllium copper
Probe lead	Standard FEP-insulated triaxial cable
Connector protector	Not included with option 02; protect and insulate the joint

Connection and case handling

Two XL gold ClickLocs	Finger tight
Maximum connector torque	0.565 N m; do not treat as a target
Standard forward-mount case	11.2 N m recommended; 33.9 N m maximum
First three threads only	7.5 N m recommended; 22.6 N m maximum
Probe case to lead	330 N maximum rated tensile strength
Probe lead to extension joint	270 N maximum rated tensile strength

Short-lead junction practice

The 0.5 m lead reaches the selected extension through the standard -02 junction. Protect and insulate the coaxial connection from earth, and support both sides without strain. Connector protectors are recommended for environmental protection, but this option does not include one.

Probe temperature and seal

The standard probe operates and stores at -52 to +177 deg C. Pressure-seal failure can occur prematurely below -34 deg C. Companion components carry separate environmental limits.

Pressure containment

The probe seals differential pressure between its tip and case using a Viton O-ring. Units are not pressure-tested before shipment. A separate pressure test is an application requirement when needed; the installation must still contain liquids and gases safely if leakage occurs. Strongly acidic or alkaline media can erode the tip assembly.

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Calibration accuracy has stated conditions

Standard 5 m system	ISF +/-5%; DSL less than +/-0.025 mm, 0 to +45 deg C
Standard 9 m system	ISF +/-6.5%; DSL less than +/-0.038 mm, 0 to +45 deg C
Probe -35 to +120 deg C, 5 m system	ISF within +/-10%; DSL within +/-0.076 mm when sensor and cable remain 0 to +45 deg C
Probe -35 to +120 deg C, 9 m system	ISF within +/-18%; DSL within +/-0.152 mm with the same companion temperature condition

Ratings versus calibration

The standard probe operating-temperature limit is broader than the temperature band used to state the tightest system accuracy. Do not apply the room-temperature accuracy row across the entire operating-temperature range. The selected standard cable is not an extended-temperature-range execution.

Engineering diagnostic map

Unexpected DC gap	Inspect target, set point, connector insulation and sensor supply
DC gap correct; AC response questionable	Verify length pairing, monitor configuration and field-circuit response
Probe resistance outside nominal tolerance	Inspect isolated probe and service connector before reconnecting
Intermittent response	Inspect seating, cable condition, connector protection and mechanical support

Companion environmental conditions

Standard extension cable	-52 to +177 deg C, operating and storage
Proximitors operation	-52 to +100 deg C
Proximitors storage	-52 to +105 deg C

Acceptance scope

These are field-check directions derived from the documented interfaces and measurement limits. They are not automatic fault codes or a substitute for the machine protection and shutdown procedure.

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Which extension lengths complete a system using 330103-01-07-05-02-00?

The 0.5 m probe uses a 4.5 m extension for a 5 m system or an 8.5 m extension for a 9 m system. Select the corresponding Proximitor electrical-length execution.

Is 220 VAC a valid operating supply for 330103-01-07-05-02-00?

No. The probe connects to the matched Proximitor sensing circuit. The conditioning stage uses a negative DC supply: -17.5 to -26 VDC for the documented non-incendive circuit, or -23 to -26 VDC with barriers.

Does the 2 mm linear span associated with 330103-01-07-05-02-00 mean a bipolar plus/minus 1 mm output?

The system provides a 2 mm target-distance span, approximately 0.25 to 2.3 mm, with about -1 to -17 VDC output. Position and voltage are interpreted from the installed operating point.

Related proximity portfolio

Bently Nevada 330103-00-08-05-02-00	Related XL 8 mm probe; compare full execution
Bently Nevada 330102-00-40-10-02-00	Related XL 8 mm probe; compare full execution
Bently Nevada 330103-00-05-10-02-00	Related XL 8 mm probe; compare full execution
Bently Nevada 330103-00-07-10-02-00	Related XL 8 mm probe; compare full execution

Selection boundary

These linked products belong to the related proximity portfolio. Compare the complete order code, selected cable, mounting interface and required approvals independently. A recommendation does not establish that another probe can replace this execution.

Manufacturer reference

3300 XL 8 mm Proximity Transducer System | Datasheet 141194 Rev. AN. Identity and ordering: pp. 13-14; electrical and measurement data: pp. 4-6; materials and installation interfaces: pp. 7-8; environmental and pressure conditions: p. 9. This ApterPower document organizes selected technical facts and field checks; it does not replace the equipment installation instructions.

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