

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.

Selected identity

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

Signal route

Shaft target Position and motion	330103 probe Eddy-current sensing	Proximator / monitor Condition and interpret
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Short-lead bearing installations

Route the 0.5 m probe lead to its selected extension while supporting the unarmored cable at the receiving assembly.

Journal vibration channels

Measure shaft motion relative to a fluid-film bearing using the matched 5 m or 9 m 3300 XL sensing chain.

Static position channels

Use the DC gap component for an appropriate conductive target inside the calibrated operating region.

Machine reference signals

Acquire speed or phase-reference target movement when the target and monitor channel are configured for that purpose.

Connection identity

The -02 option supplies a miniature ClickLoc connection on standard cable without an included protector. This unarmored 330103 execution has a 0.5 m electrical lead and needs the matching extension; its metric case codes describe a separate selection.

Channel interpretation

The probe senses target movement; the Proximator conditions that connection into a voltage used by the monitor. Evaluate the complete chain when interpreting a DC position or AC shaft-vibration value.

Application boundary

Position, vibration and reference measurements use the completed transducer chain. Confirm the actual machine channel assignment and target arrangement before transferring an installed configuration.

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Matched-system and probe characteristics

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

Available electrical-length arrangements

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

Materials and connection

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

Calibration basis

The performance basis uses a complete 3300 XL 8 mm probe, extension where required and Proximator 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.

Independent signal wiring

The Proximator-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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01 / Use

Use the selected 4.5 m or 8.5 m extension; the 0.5 m probe is not the direct 1 m sensor configuration.

02 / Keep

Keep the M10 x 1 mounting interface and thread engagement consistent with the receiving assembly.

03 / Arrange

Arrange protection for the -02 junction and electrically insulate its coaxial connection from ground.

04 / Use

Use the reduced case-torque instruction where only the first three threads engage.

05 / Connect

Connect only to the matched Proximitor sensing circuit; do not apply 220 VAC to the probe lead.

06 / Verify

Verify the target calibration and -9 VDC radial-gap operating point before interpreting vibration.

07 / Separate

Separate the broad temperature rating from calibration accuracy and pressure-seal behavior.

08 / Support

Support the lead without making the rated tensile strength a continuous operating load.

Handling and temperature limits

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

Important Notice

This execution does not include the -01 connector protector or an agency-approved -05 selection. Provide suitable connection protection and independent process containment for the actual installation.

Engineering note

The 0.5 m probe requires the correct extension for a 5 m or 9 m transducer system. Option -02 supplies the standard ClickLoc connection without a protector; it is a sensing element, not a 220 VAC instrument.

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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.

Can 330103-01-07-05-02-00 measure static position below 10 Hz?

The matched-system response extends from DC to 10 kHz. The DC component represents static target position; 10 Hz is not the lower cutoff listed for this system.

What changes when only the first three case threads of 330103-01-07-05-02-00 engage?

Use the reduced support-condition torque: 7.5 N m recommended and 22.6 N m maximum. Full standard forward-mount engagement has a different case-torque instruction.

Interpreting the two outputs

DC gap indicates the static position relative to the operating point; the dynamic component carries vibration or reference-target information. A correct DC value does not remove the need for an application-specific dynamic acceptance check.

Check the 4.5 m extension independently

For the 5 m arrangement, the isolated 4.5 m extension has nominal center-to-center resistance 0.99 +/- 0.15 ohm and outer-to-outer resistance 0.30 +/- 0.06 ohm. These values describe the extension, not the joined probe or monitor circuit.

The 9 m arrangement uses a different extension

The 8.5 m extension has nominal center-to-center resistance 1.87 +/- 0.28 ohm and outer-to-outer resistance 0.56 +/- 0.11 ohm. Identify the extension length before using a resistance acceptance value.

Document guide

Technical Reference	Configuration, signal data, construction and performance conditions
Installation & Commissioning Guide	Pairing, connection, electrical checks and channel acceptance
Complete Product Information	Public product facts, applications, precautions and questions

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Can the tensile-strength ratings of 330103-01-07-05-02-00 be used as installation pull targets?

They are maximum component ratings, not recommended pulling forces: 330 N from case to lead and 270 N at the probe-lead-to-extension junction. Support the installed cable to avoid persistent strain.

Why can a less-negative sensor supply change the usable range with 330103-01-07-05-02-00?

The conditioning-stage supply can reduce the usable linear range when it is more positive than -23.5 VDC. Check the voltage under the installed load and the applicable circuit requirements.

What target material establishes the standard calibration used with 330103-01-07-05-02-00?

AISI 4140 steel is the standard target basis. Confirm the actual shaft material and applicable calibration before transferring the nominal scale factor to a different target.

Related proximity portfolio

Bently Nevada 330103-00-08-05-02-00	Related XL 8 mm probe; compare full execution
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Bently Nevada 330102-00-40-10-02-00	Related XL 8 mm probe; compare full execution
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Bently Nevada 330101-00-50-10-02-00	Related XL 8 mm probe; compare full execution
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Bently Nevada 330103-00-07-05-02-00	Related XL 8 mm probe; compare full execution
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Model selection

Preserve the complete identifier in every request and installation record. A matching base number is only one part of selection; compare the connector/protector execution, electrical length, mounting interface, target and required approval.

Component temperature context

Standard probe	-52 to +177 deg C, operating and storage
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Standard extension cable	-52 to +177 deg C, operating and storage
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Proximitior operation	-52 to +100 deg C
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Practical return-to-service checks

Keep the connector insulated, verify the selected system length and repeat the relevant static and dynamic tests after service. Assess any process containment independently of the probe O-ring. Release the channel under the equipment-specific procedure.

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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