01 INSTALLATION & COMMISSIONING

Bently Nevada 330104-03-09-10-02-00

01 / DEFINE THE PROBE AND CHANNEL

Equipment covered

Bently Nevada 330104-03-09-10-02-00 is an armored 3300 XL 8 mm proximity probe with an M10 x 1 mounting thread and a 1 m standard cable. Its ClickLoc connection supports a selected XL system for non-contact shaft vibration and position measurements.

Read this complete execution

330104	XL 8 mm probe; M10 x 1; armored
AA03 / BB09	Retained partial-thread mechanical execution
CC10	1.0 m total probe length
DD02	Standard cable; ClickLoc without included protector
EE00	Agency approval not required

Plan the electrical length

1 m system	1 m probe; no extension; matching 1 m Proximitor
5 m system	1 m probe + 4 m extension; matching 5 m Proximitor
9 m system	1 m probe + 8 m extension; matching 9 m Proximitor

01 Establish the machine work boundary

Identify the monitored shaft and channel before disconnecting the transducer. Apply the plant isolation and protection procedure and retain the existing circuit labels and target-calibration record.

02 Confirm the intended function

Identify whether the channel measures radial vibration, static position or a timing reference. A radial gap recommendation is not a universal position setpoint, and an overspeed application requires its dedicated engineering review.

Related proximity-probe portfolio

Bently Nevada 330103-00-08-10-02-00	Related XL probe; compare full execution

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02 / MOUNT THE METRIC ARMORED PROBE

03 Check the mating thread

Confirm the M10 x 1 internal fit and the 15 mm engagement limit before mounting. Do not force a binding thread. Retain the selected AA03 / BB09 mechanical execution during a replacement.

Keep case and connector torque separate

Standard forward mount	11.2 N m recommended; 33.9 N m maximum
First three threads	7.5 N m recommended; 22.6 N m maximum
Two XL ClickLoc connectors	Finger tight; 0.565 N m connector maximum

04 Support the armored lead

Route the standard cable with a minimum 25.4 mm bend radius, mechanical support and accessible service junctions. Avoid jacket crushing, sharp-edge contact and persistent connector tension.

05 Seat and protect the ClickLoc joint

DD02 selects standard cable and a miniature coaxial ClickLoc connector without an included protector. Choose suitable connector protection for the local environment. Silicone tape supplied with XL extension cables is not recommended at probe-to-extension joints exposed to turbine oil. Optional FluidLoc cable must not be assumed from the base family.

06 Assess the environment

The standard probe operates and stores at -52 to +177 deg C. The Proximitor operates at -52 to +100 deg C and stores at -52 to +105 deg C. Exposure below -34 deg C can cause premature pressure-seal failure; the broad electrical temperature range is not a pressure-containment guarantee.

Mechanical acceptance

Proceed after the mounting fit, support condition, cable route and connection protection agree with the equipment procedure. Mechanical fit alone does not confirm system length or target calibration.

Related proximity-probe portfolio

Bently Nevada 330103-00-08-10-01-00	Related XL probe; compare full execution

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03 / CHECK COMPONENT AND FIELD CIRCUITS

Probe check references

Nominal Probe DC Resistance	7.59 +/-0.50 ohm; center to outer conductor
Standard Probe Cable	75 ohm triaxial; FEP insulated
Probe Tip Material	Polyphenylene sulfide (PPS)
Probe Case Material	AISI 303 or 304 stainless steel

07 Measure the isolated probe

With the channel isolated under the machine procedure, distinguish the center and outer conductors and use the 1 m probe resistance value. A complete connected-channel measurement cannot be substituted for this isolated component test.

Companion conditioner supply

Non-incendive circuit per drawing 140979	-17.5 to -26 VDC
Circuit with barriers	-23 to -26 VDC
Maximum Proximitor current	12 mA
Output resistance	50 ohm

08 Restore the chosen electrical length

Read the Proximitor length marking and restore the selected probe-only, 4 m-extension or 8 m-extension arrangement. Do not shorten or splice an undocumented coaxial segment to obtain a routing fit.

09 Inspect the separate monitor circuit

The Proximitor-to-monitor path is separate from the probe-plus-extension electrical length. The field circuit uses 0.2 to 1.5 mm2 conductors; a three-conductor shielded triad with tinned wiring is recommended. The documented maximum is 305 m, with high-frequency rolloff evaluated against the published response curves.

Supply and range

Operation at a voltage more positive than -23.5 VDC can reduce linear range. Verify the actual conditioned circuit supply and applicable barrier arrangement before interpreting an apparent range problem.

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04 / SET GAP AND VERIFY RESPONSE

Commissioning reference values

Matched System Linear Range	2 mm; approximately 0.25 to 2.3 mm
Radial Vibration Gap Setting	-9 VDC; approximately 1.27 mm
Nominal System Scale Factor	7.87 V/mm (200 mV/mil)
System Frequency Response	0 to 10 kHz; +0 / -3 dB

10 Apply the target calibration

The reference channel consists entirely of XL 8 mm components with an AISI 4140 steel target, -24 VDC supply, 10 kohm load and 1.27 mm probe gap. Unless another row states otherwise, components are +18 to +27 deg C and altitude is no greater than 2000 m. A different target calibration changes the applicability of the stated system accuracy.

11 Set radial gap when applicable

For a radial-vibration installation, the documented recommendation is -9 VDC, approximately 1.27 mm at the specified calibration. Confirm the target and complete selected channel before using the voltage-to-distance relationship.

12 Use the matching accuracy row

For standard 1 m and 5 m systems at 0 to +45 deg C, ISF is 7.87 V/mm within +/-5% and DSL is below +/-0.025 mm. For the standard 9 m system at the same temperature interval, the corresponding values are +/-6.5% and below +/-0.038 mm. These are complete-channel limits, not an isolated probe calibration.

13 Review operating temperature

With the probe at -35 to +120 deg C and the conditioner and extension at 0 to +45 deg C, the standard 1 m / 5 m performance row allows ISF within +/-10% and DSL within +/-0.076 mm. The 9 m row instead allows +/-18% and +/-0.152 mm. Apply each temperature condition to the appropriate component.

Release condition

Confirm static response, intended dynamic response and monitor interpretation through the machine functional test. Retain channel identity and protection settings under the approved equipment procedure; a resistance reading alone is not a functional acceptance.

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05 / SERVICE DECISIONS AND HANDOVER

Can 330104-03-09-10-02-00 be connected without an extension cable?

Yes, with the matching 1 m XL Proximitor. For a 5 m channel use a 4 m extension, and for a 9 m channel use an 8 m extension. Keep the full electrical length consistent with the sensor marking.

What does the final 00 on 330104-03-09-10-02-00 mean for approvals?

EE00 is the agency-approval-not-required selection. It is not evidence that a particular hazardous-area installation is certified; check the actual equipment requirements and supplied marking.

How should the two temperature locations for 330104-03-09-10-02-00 be assessed?

The standard probe operates and stores at -52 to +177 deg C. Its companion Proximitor operates to +100 deg C and stores to +105 deg C, so each installed location needs its own temperature check.

Related proximity-probe portfolio

Bently Nevada 330103-00-08-05-02-CN	Related XL probe; compare full execution
Bently Nevada 330104-00-06-05-01-05	Related XL probe; compare full execution
Bently Nevada 330102-00-28-10-02-05	Related XL probe; compare full execution

Retain the installation result

Record the full probe code, selected total electrical length, target calibration, resistance check and completed gap/response test. Recommended portfolio items require their own execution review before procurement.

Retain these commissioning records

Model and circuit	Full execution and chosen 1 m / 5 m / 9 m length
Mechanical fit	M10 thread, supported turns and routing condition
Component test	Isolated probe resistance and connection inspection
Functional test	Target calibration, gap and monitor response

Manufacturer reference

3300 XL 8 mm Proximity Transducer System, Datasheet 141194 Rev. AN. System role pp. 1-3; resistance and reference conditions p. 4; gap and accuracy p. 5; response p. 6; mechanical interfaces p. 7; engagement and connector practice p. 8; temperatures p. 9; metric probe ordering pp. 13-14; extension ordering pp. 18-19. Field checks organize these facts for the installed machine procedure.

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