144181-51

01 / Product identity and function

3300 XL 5/8 mm Proximitor Sensor

Bently Nevada 144181-51 is the five-metre 3300 XL 5/8 mm Proximitor Sensor. With a compatible probe and extension cable it converts probe-to-target clearance into a proportional voltage for machinery monitoring.

Signal path

Proximitor output to the machinery monitor

Connection method

SpringLoc field terminals and ClickLoc probe connector

Mounting choice

DIN rail or compatible four-hole panel arrangement

Commissioning focus

Gap voltage and complete-system response

Installed-system context

The supplied marking identifies a five-metre system sensor with nominal scale factor 7.87 V/mm (200 mV/mil) and a -24 VDC supply. Its terminal labels are OUT, COM and V+; the coaxial connector accepts the probe/extension-cable path. These are nameplate facts for the offered 144181-51 unit.

Manufacturer reference: Bently Nevada datasheet 141194 Rev. AN. Confirm the installed probe, lead length and target calibration.

Measurement-chain context

Install the five-metre Proximitor with the documented probe, extension cable, conductive target and compatible monitor input.

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02 / Technical data and limits

Nameplate system length	5 m	**Nameplate scale factor**	7.87 V/mm (200 mV/mil)
Nominal nameplate supply	-24 VDC	**Family nonincendive supply**	-17.5 to -26 VDC, per drawing 140979
Family barrier supply	-23 to -26 VDC	**Family maximum current**	12 mA
Family output resistance	50 Ω	**Family field-wire size**	0.2-1.5 mm² (16-24 AWG)
Family recommended field cable	3-conductor shielded triad	**Family maximum monitor run**	305 m (1,000 ft), subject to frequency rolloff

Data applicability

Nameplate values identify the offered 144181-51. The additional electrical and performance rows are 3300 XL 8 mm family specifications, not a stand-alone guarantee for a mixed-component or differently calibrated installation.

Why can 144181-51 show a plausible bias but inaccurate vibration amplitude?

A mixed XL/non-XL chain, wrong electrical length, target material or load can change the scale factor even when a DC gap voltage appears reasonable. Check the complete chain and compare a controlled response with the installed calibration basis.

How should the five-metre chain for 144181-51 be identified?

Record the probe order code, integral lead length and extension-cable length, then confirm their combined system length agrees with the five-metre sensor marking. Inspect the connector style and any calibrated target-material option.

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03 / Configuration and uses

Family linear range	2 mm (80 mil), complete standard XL system	**Family nominal radial gap**	-9 VDC / about 1.27 mm
Family 5 m ISF tolerance	±5% at 0-45°C under datasheet conditions	**Output terminal marking**	OUT
Common terminal marking	COM	**Supply terminal marking**	V+

Bently Nevada describes the 3300 XL 8 mm transducer chain as a probe, an extension cable and a Proximitor Sensor. Its output follows the clearance to a conductive target, enabling static position and dynamic vibration measurement. The manufacturer also documents backward interchangeability with 3300 5 mm and 8 mm components, but a mixed XL/non-XL chain is limited to the non-XL system performance specification.

Family performance figures are conditional on the complete standard XL system, AISI 4140 target, -24 VDC supply, 10 kΩ load and specified gap. When fitting a replacement, retain the installed five-metre electrical length, check target calibration and set the probe gap by the machine drawing and monitor procedure.

Applications

Shaft vibration

Convert dynamic probe-gap changes at a fluid-film bearing into a voltage for a compatible vibration channel.

Axial position

Observe slower changes in shaft-to-probe clearance where the machine drawing defines the target and operating gap.

Keyphasor reference

Use a suitable probe and target feature for rotational reference or speed measurement under the manufacturer application guidance.

Legacy 3300 exchange

A compatible 3300 5 mm or 8 mm component may physically interface, but assess the resulting mixed-system performance before acceptance.

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04 / Service and support

Isolate the measurement loop

Before removal, record OUT, COM, V+ wiring and disconnect power according to the site procedure.

Preserve electrical length

Check that probe plus extension cable matches the five-metre system marking; a visual connector match is insufficient.

Verify target calibration

The family datasheet assumes AISI 4140 steel by default; another shaft material needs its own calibration basis.

Protect the coaxial path

Inspect ClickLoc mating surfaces, cable routing and connector protection; avoid oil ingress and mechanical strain.

Technical questions

Why does field-cable length matter for 144181-51?

The family datasheet allows up to 305 m between the Proximitor and monitor with specified shielded field wiring, but longer runs attenuate high-frequency response. Check the frequency-response graph and the machine channel bandwidth.

Technical enquiry

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