Bently Nevada 330851-02-000-050-10-00-05

01 Function and selected configuration

Product function

Bently Nevada 330851-02-000-050-10-00-05 supports non-contact observation of rotor growth relative to the turbine casing. The medium-reach threaded case supports collar or ramp observation where target material and available sensing surface determine whether the nominal system response can be used.

Selected configuration

The M30×2 probe has a 50 mm overall case length, a zero unthreaded-length selection and a 1.0 m total lead. The selected 00 armor option uses an unarmored lead. PEEK forms the probe tip, AISI 304 stainless steel forms the case, and the 75 Ω triaxial FluidLoc cable uses PFA insulation.

Functional path

Rotor collar / ramp	1.0 m 25 mm probe	Matched cable / Proximitor	DE monitor channel

Case interface	M30×2 threaded construction
Integral lead	1.0 m unarmored FluidLoc cable
Matched-system output	0.787 V/mm nominal

The 1 m probe lead combines with the appropriate 4 m or 8 m extension cable to form a 5 m or 9 m system using the matching 3300 XL 25 mm Proximitor Sensor. Disconnected probe resistance from center to outer conductor is 6.2 ± 0.5 Ω. Cable and conditioner selection must preserve the complete electrical length.

330851-02-000-050-10-00-05 / Technical operating envelope

02 Technical operating envelope

Transducer family	3300 XL 25 mm
Mounting thread	M30×2
Overall case length	50 mm
Unthreaded-length selection	0 mm
Total probe lead	1.0 m
Lead armor	None

Probe resistance, center to outer	6.2 ± 0.5 Ω
Probe tip / case material	PEEK / AISI 304 stainless steel
Cable construction	75 Ω triaxial, PFA-insulated FluidLoc
Matched-system scale factor	0.787 V/mm nominal
Matched-system linear range	12.7 mm under specified calibration conditions
Probe continuous temperature	-35 to +200 °C

Range and sensitivity describe the matched transducer system. The probe itself is passive; DC supply and conditioned output belong to the Proximitor Sensor. Use the 1 m probe resistance before adding extension-cable resistance.

Output loading

Reference performance uses a 10 kΩ load. Sensor output resistance is 50 Ω; assess the receiving channel and field wiring together.

Temperature conditions

Continuous probe operation is -35 to +200 °C. Short-term exposure up to +250 °C is limited to less than 24 hours.

330851-02-000-050-10-00-05 / System integration and applications

03 System integration and applications

Target and approval assessment

Check the AISI 4140 calibration basis, collar surface and actual multiple-approval markings for the intended installation.

Turbine collar observation

Measure differential rotor-to-casing growth with a correctly aligned and gapped matched transducer chain.

Complementary DE channels

Use opposing collar faces only with the intended two-channel arrangement and corresponding monitor configuration.

Controlled displacement verification

Move the probe mounting relative to the target and compare the electrical indication with a mechanical movement reference.

System and supply context

This 1.0 m probe is one component of the 3300 XL 25 mm transducer chain. The Proximitor Sensor, any required extension cable, brackets and monitor are separate unless itemized.

Application boundary

Differential-expansion performance depends on the collar or ramp geometry, target material and configured channel arrangement. Mechanical fit alone does not establish electrical or calibration compatibility.

Why does 330851-02-000-050-10-00-05 need a target large enough to cover the sensing field?

The specified flat target is at least 61 mm in diameter. A smaller target or an unsuitable collar geometry can change the response, so the available target surface must be checked before applying the stated system performance.

330851-02-000-050-10-00-05 / Engineering selection decisions

04 Engineering selection decisions

Which target material underlies the standard calibration for 330851-02-000-050-10-00-05?

The standard matched system is calibrated to Bently Nevada AISI 4140 steel. Accuracy and interchangeability limits do not automatically apply to a different target material; a different calibration must be selected deliberately.

What cable construction protects the signal path of 330851-02-000-050-10-00-05?

The probe uses 75 Ω triaxial FluidLoc cable with PFA insulation. The 00 armor option provides no stainless-steel armor, so the routing must protect the lead from mechanical damage.

What changes when two probes like 330851-02-000-050-10-00-05 view opposite sides of a collar?

A complementary-input arrangement can approximately double the measurable differential-expansion range. It requires the appropriate two-channel geometry and monitor configuration rather than simply reversing one probe signal.

How does temperature affect the accuracy assessment for 330851-02-000-050-10-00-05?

The principal accuracy limits use the stated calibration conditions. Over the specified extended-temperature combinations, deviation from the best-fit straight line can increase to ±0.92 mm; apply the relevant probe, cable and sensor temperatures together.

Separate torque limits	Do not apply probe-body tightening torque to the electrical connector; connector maximum is 0.565 N·m.
Observe thermal boundaries	Apply probe, cable and Proximitor Sensor temperature limits separately; avoid treating short-term exposure as continuous service.

330851-02-000-050-10-00-05 / Configuration boundary and references

05 Configuration boundary and references

Lifecycle and support

The current manufacturing and manufacturer-support phase of 330851-02-000-050-10-00-05 is unconfirmed. Confirm the exact hardware configuration and available service route before planning a replacement.

Replacement assessment

Match the complete probe configuration and electrical length. Upgrades from 7200 or 25 mm DE Integral equipment require replacement of the probe, extension cable and Proximitor Sensor as a matched 3300 XL 25 mm system.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains configuration and selection boundaries. The independent installation guide organizes preparation, connection, testing and handover. It does not replace the applicable manufacturer installation instructions.

Technical basis

Bently Nevada 3300 XL 25 mm Proximity Transducer System, 163236 Rev. M.

Related product navigation

- Bently Nevada 330851-06-000-070-50-00-05
- Bently Nevada 330851-02-000-060-10-01-05
- Bently Nevada 330851-02-000-070-10-00-05

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries