Bently Nevada 330780-51-CN

01 Function and selected configuration

Product function

Bently Nevada 330780-51-CN conditions an 11 mm proximity-probe chain for extended-range displacement measurement, providing a voltage signal for position and vibration monitoring.

Selected configuration

The 51 configuration uses DIN mounting and a 5.0 m electrical chain. Probe and extension-cable lengths must add to that total, and both must belong to the compatible 3300 XL 11 mm system. SpringLoc terminals provide the field-wiring connection between the conditioner and monitoring channel.

Functional path

11 mm probe	5 m probe + cable	330780 conditioner	Configured monitor

Selected system	5.0 m electrical length; DIN mount
Nominal sensitivity	3.94 V/mm (100 mV/mil)
Linear measurement range	4.0 mm in the matched system

Applications include axial position, ramp differential expansion and reciprocating-compressor rod position where the longer linear span is useful. Upgrading a 7200-series 11 mm or 14 mm installation requires replacement of all transducer components with the 3300 XL 11 mm arrangement and review of the receiving monitor configuration.

330780-51-CN / Technical operating envelope

02 Technical operating envelope

Electrical system length	5.0 m
Mounting	DIN rail, option 51
Sensor input	One 3300 XL 11 mm probe and extension cable
Nominal scale factor	3.94 V/mm (100 mV/mil)
Incremental scale-factor tolerance	±10%, including interchangeability, at reference conditions
Linear range	4.0 mm; approximately 0.5–4.5 mm gap
Recommended gap	2.5 mm

Supply without barriers	-17.5 to -26 VDC
Supply with barriers	-23 to -26 VDC
Maximum current	12 mA
Output resistance	50 ohm
Frequency response	DC–8 kHz, +0 / -3 dB typical
Sensor operating temperature	-52 to +100 °C
Field conductor range	0.2–1.5 mm²; 0.25–0.75 mm² with ferrules

The nominal 4.0 mm span is approximately 0.5–4.5 mm gap at the reference conditions. The system can have reduced range with insufficient negative supply headroom. Extended DSL operation is not applicable with zener barriers. Probe, extension cable and conditioner must form the same 11 mm system.

330780-51-CN / System integration and applications

03 System integration and applications

Axial thrust position

Use the longer linear span to track axial movement against a suitable conductive thrust target.

Ramp differential expansion

Combine the 11 mm measurement chain with an engineered ramp arrangement and the appropriate monitor configuration.

Compressor rod position

Observe rod position or rod drop where the mounting geometry, target and measurement span support the application.

Radial vibration and phase

Connect to suitable vibration or phase-reference channels with the correct 11 mm scale factor and target feature.

System and supply context

The 330780-51-CN conditions one compatible 11 mm probe and cable chain. The selected total electrical length is 5.0 m; probe, extension cable and monitoring equipment are separate items.

Application boundary

These applications describe the completed transducer system. Select the target arrangement and receiving monitor function for the particular machine measurement.

Can 330780-51-CN operate with a 1 m probe and 4 m extension?

Yes, when both are compatible 3300 XL 11 mm components: their electrical lengths total 5.0 m. An arbitrary cable with the same physical length is not equivalent.

330780-51-CN / Engineering selection decisions

04 Engineering selection decisions

Which mounting and electrical length are selected by 51 in 330780-51-CN?

Option 51 selects a 5.0 m system with DIN mounting. The total includes the probe and compatible extension cable; it is not a 5 m field-wire limit.

Why must an 8 mm channel scale factor be changed for 330780-51-CN?

The 11 mm system has a nominal sensitivity of 3.94 V/mm, whereas the common 8 mm system uses 7.87 V/mm. Leaving the wrong sensitivity in the receiving channel changes the interpreted displacement.

Does 330780-51-CN alone replace an entire 7200 11 mm or 14 mm system?

No. All transducer components must be replaced by the compatible 3300 XL 11 mm chain, and the receiving monitoring system must be reviewed and updated as necessary.

Can the +177 °C probe limit be applied to 330780-51-CN?

No. The Proximitor Sensor operates from -52 to +100 °C. It is a separate electronic component with a lower upper-temperature limit than the probe and extension cable.

System sensitivity	Set the receiving channel for the 3.94 V/mm nominal 11 mm chain rather than an 8 mm scale factor.
Target geometry	Check target material, usable gap and neighboring-probe clearance against the 11 mm system requirements.

330780-51-CN / Configuration boundary and references

05 Configuration boundary and references

Lifecycle and support

Current production and end-of-support status are not confirmed for this exact configuration.

Replacement assessment

Retain the 5.0 m electrical length and DIN mounting, and verify an 11 mm probe/cable chain and matching channel sensitivity. A 7200 upgrade requires the complete transducer conversion and monitor review.

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 11 mm Proximity Transducer System, 146256 Rev. T.

Related product navigation

- Bently Nevada 330703-000-040-10-02-00
- Bently Nevada 330703-000-100-10-02-00
- Bently Nevada 330703-000-050-10-12-05

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

Product enquiries