Bently Nevada 330780-91-05

01 Define the nine-metre conditioning chain

1 Read calibration and mounting together

Confirm the complete 330780-91-05 marking and the 9 m calibration on the unit. The 91 option combines that calibration with DIN mounting. Keep the mounting selection and the electrical-length selection as separate checks; a sensor that physically fits the rail may have a different calibration.

2 Identify the connected probe circuit

Record the 11 mm probe and compatible extension cable, including their lengths. A 1 m probe plus an 8 m extension is a standard 9 m combination. Do not include the monitor field wiring in this total or treat unused cable slack as permission to cut the probe cable shorter.

3 Establish the approved work state

Identify the monitoring channel and the machine response to a disconnected or invalid signal. Use the plant maintenance procedure to control alarms and protective functions before opening the circuit. Record the pre-work gap value and relevant monitor configuration so that the final result can be compared with a known baseline.

Calibration	9 m total probe and extension
Mounting	DIN pad and retention checked
Baseline	Gap, monitor scale and channel response retained

330780-91-05 / Prepare supply, barriers and terminals

02 Prepare supply, barriers and terminals

1 Check the negative supply arrangement

Identify the supply and return from the approved drawing before connection. Without barriers, the stated supply range is -17.5 to -26 V DC; with barriers it is -23 to -26 V DC. Verify polarity and available voltage at the sensor instead of assuming the cabinet power supply rating reaches the terminals unchanged.

2 Review output headroom

The nominal reference uses -24 V DC. Operation more positive than -23.5 V DC can reduce the linear range, so evaluate supply drop and barrier effects against the required displacement. Do not interpret the wider allowed supply interval as an unconditional guarantee of the full measurement span.

3 Prepare field conductors

Use the specified terminal conductor range of 0.2-1.5 mm2, or 0.25-0.75 mm2 with ferrules. Inspect strip length and terminal engagement using the applicable installation instructions. Three-conductor shielded triad cable is recommended; preserve the engineered shield and reference arrangement rather than creating an unintended ground path.

No barrier	-17.5 to -26 V DC
With barrier	-23 to -26 V DC
Field conductors	0.2-1.5 mm2; ferrule range is narrower

330780-91-05 / Mount and connect the conditioner

03 Mount and connect the conditioner

1 Secure the DIN assembly

Inspect the DIN mounting pad and make sure the installed sensor is positively retained. Allow access to the terminals and avoid using the wiring as mechanical support. The sensor location must remain inside its own temperature limit even when the probe operates at a substantially hotter machine location.

2 Keep calibrated and field circuits distinct

Connect the verified 9 m probe circuit to the sensor and the field conductors to their assigned monitor circuit. Maintain connector cleanliness and protection throughout the work. Do not interchange a standard field-wire route with the coaxial transducer cable or splice the calibrated path for convenience.

3 Check the thermal environment

The conditioner operates from -52 to +100 deg C and stores up to +105 deg C. The probe and extension cable have different limits. Review cabinet heat, nearby equipment and the actual mounting location; applying the probe's +177 deg C limit to the conditioner would exceed its rating.

Retention	Sensor secured to correct DIN hardware
Circuit separation	Coaxial calibrated path / monitor field wiring
Operating limit	Conditioner maximum +100 deg C

330780-91-05 / Measure and prove the signal path

04 Measure and prove the signal path

1 Check the static reference

After controlled energization, compare gap voltage and the corresponding target position through the complete transducer system. The reference uses a 2.5 mm gap and an AISI 4140 steel target. A stable output by itself is not enough to establish the correct sensitivity if the target material or electrical length is wrong.

2 Verify movement and monitor scaling

Use an approved controlled movement or calibration fixture to check signal direction and scale. The nominal factor is 3.94 V/mm and the standard span is 4 mm under the stated conditions. Confirm the receiving monitor uses the same units and scaling before enabling protection.

3 Assess the field-cable response

The typical 0-8 kHz response includes conditions on field wiring up to 305 m. Compare the actual cable route and loading with the intended measurement bandwidth. Check for interference and unintended grounding, especially when a correct low-frequency or DC reading masks a degraded dynamic signal.

Gap reference	2.5 mm with specified target conditions
Scale	3.94 V/mm nominal
Dynamic path	Field-cable length, loading and bandwidth considered

330780-91-05 / Resolve deviations and document release

05 Resolve deviations and document release

1 Start with identifiable mismatches

If the channel response is wrong, compare the sensor calibration label, probe length, extension length, supply polarity and monitor scale before exchanging hardware. Inspect one part of the path at a time. A 5 m component combination on a 9 m conditioner is a configuration problem rather than evidence of a defective sensor.

2 Keep barrier restrictions explicit

With zener barriers, do not apply the extended deviation-from-straight-line range. Verify the approved barrier circuit, the available negative supply and the actual unit markings. General multiple-approvals ordering information does not certify every wiring method or hazardous-area arrangement for the installed unit.

3 Retain the final channel record

Save component identities, electrical lengths, supply measurements, target and gap conditions, monitor settings and the protection-test result. Record any change in DIN mounting or field-wire routing. Remove temporary maintenance states only after the responsible team accepts the whole restored channel, not merely the conditioner output.

Technical basis: 3300 XL 11 mm Proximity Transducer System, 146256 Rev. T.

Related product navigation

- Bently Nevada 330730-040-00-00
- Bently Nevada 330780-90-CN
- Bently Nevada 330780-50-CN

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