Review the installed chain

Bently Nevada / 21504-000-040-10-02

Bently Nevada

21504-000-040-10-02

Bently Nevada 21504-000-040-10-02 is an 8 mm eddy-current proximity probe for a matched 7200 measuring chain, with standard 3/8-24 mounting and an unarmored integral lead.

Apter Power installation planning guide. Verify the actual equipment and approved site procedure before work.

Identity

Keep the complete 21504-000-040-10-02 marking and compare the actual tip, case and cable route with the installed probe.

Electrical length

Identify the integral lead and extension combination before selecting a 5 m or 9 m Proximitor.

Channel function

Record whether the monitor uses radial vibration, thrust position, average radial position or eccentricity.

Configuration checkpoint	Selected item
Transducer family	7200 5 mm and 8 mm system
Measurement principle	Noncontact eddy current
Probe tip diameter	8 mm
Mounting configuration	Standard forward mount
Case thread	3/8-24
Lead armor	None

Additional engineering checks

Review item	Technical basis
Probe construction	The 21504 design uses an 8 mm PPS tip and standard 3/8-24 mounting.
Lead route	The integral lead is unarmored; a protected machine route is required where physical abuse is possible.
Case comparison	Measure the actual installed case and unthreaded sections; retain the complete 000/040 marking rather than reducing it to a guessed two-digit code.

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Check mounting and environment

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Probe + integral lead — Matched extension / Proximitor — Monitor input

Threaded connection

Match the standard 3/8-24 case and the actual mechanical geometry. Do not use the shipping size as a machine mounting drawing.

Lead protection

Provide a protected route for the unarmored coaxial cable and avoid physical abuse at the probe junction.

Environment

Keep the chain within 95% noncondensing humidity. The PPS tip construction does not make all connected components waterproof.

Readiness check	Practical criterion
Preserve the electrical chain	Match integral lead, extension cable and conditioner to the installed 5 m or 9 m system configuration.
Protect the unarmored lead	Avoid physical abuse at the probe junction and cable route. Do not treat the coaxial lead as a power-input cable.
Verify the actual mounting	Match the standard 3/8-24 thread and actual case dimensions without altering the complete ordered reference.

Additional engineering checks

Review item	Technical basis
Tip contact	The 8 mm PPS probe has stated resistance to direct water and lubricating-oil contact.
Humidity boundary	The system limit is up to 95% relative humidity, noncondensing; protect the whole chain rather than only the sensing face.
Probe/extension zone	The operating range is -34 to +177 deg C.
Conditioner zone	The separate Proximitor has a -51 to +100 deg C operating range.

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Assemble the signal path

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Probe connection

Connect the integral coaxial lead into the matching extension/Proximitor chain. The conditioner generates the probe excitation.

Conditioner choice

A 18745-03 is associated with a 5 m combined chain; a 18745-04 is associated with a 9 m chain.

Monitor connection

Use the three-conductor shielded path between the Proximitor and monitor for power, common and conditioned output.

Installation hold point	Required review
Check the calibration target	Verify system response with the actual target; AISI 4140 steel is the reference calibration material.
Separate thermal zones	Keep the probe/extension within -34 to +177 deg C and the separate Proximitor within -51 to +100 deg C.
Keep the chain dry	Respect the 95% noncondensing humidity limit and protect the connector and field wiring from contamination.

Keep the installed configuration and controlled observations with the machine channel record. Do not release a channel solely because the mechanical item fits.

Additional engineering checks

Review item	Technical basis
Electrical length	Probe integral lead plus extension must match the selected total-chain design.
Five-metre system	Use the applicable combined chain with the 18745-03 conditioner.
Nine-metre system	Use the applicable combined chain with the 18745-04 conditioner.
Monitor-side wiring	Three-conductor shielded cable supplies power and carries conditioned output between the Proximitor and monitor.

Verify target and response

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Probe + integral lead — Matched extension / Proximitor — Monitor input

Reference setup

The system reference uses AISI 4140 steel at +22 deg C, -24 V DC and a 10 kilohm load.

Measuring span

An assembled calibrated system provides an 80 mil span beginning approximately 10 mil from the probe face; establish the operating point using the machine requirement.

Sensitivity

Confirm a nominal 200 mV/mil response with the complete selected chain rather than testing the bare probe as a voltage transmitter.

Acceptance boundary	Verification focus
Maximum relative humidity	95%; noncondensing
Matched-system calibrated span	2.0 mm (80 mils)
Matched-system nominal scale factor	200 mV/mil (7.87 V/mm)
Matched-system frequency response	DC to 10 kHz; -5% at 10 kHz
Reference target	AISI 4140 steel at +22 deg C

Additional engineering checks

Review item	Technical basis
Reference target	Calibration uses an AISI 4140 steel target at +22 deg C.
Power and load	The reference system setup uses -24 V DC and a 10 kilohm load.
Span position	The 80 mil calibrated span starts approximately 10 mil from the sensing face.
Dynamic capability	DC to 10 kHz with -5% at 10 kHz is a matched-system characteristic.

Release and maintain the channel

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Thermal separation

Keep the probe/extension rating separate from the conditioner rating: -34 to +177 deg C versus -51 to +100 deg C.

After replacement

Recheck gap-related output, lead continuity and monitor response whenever a chain component changes.

Maintenance record

Retain the actual mounted geometry, target material, electrical length and conditioner identity with the channel record.

Related Bently Nevada products

Separate catalogue references for independent selection. These links do not establish compatibility or substitution.

Product reference	Explore
Bently Nevada 21504-00-48-10-02	View Bently Nevada 21504-00-48-10-02
Bently Nevada 21504-00-20-10-02	View Bently Nevada 21504-00-20-10-02
Bently Nevada 21504-00-24-10-02	View Bently Nevada 21504-00-24-10-02

Technical reference: Bently Nevada 7200 Proximity Transducer Systems, 5 mm and 8 mm, L5001 04/90.

Additional engineering checks

Review item	Technical basis
Signal source	The Proximitor generates RF excitation and conditions the returned eddy-current signal.
Monitor distance	The 7200 Proximitor may be up to 1,000 feet from a standard compatible monitor under the stated system arrangement.
Shared performance	The range/sensitivity of the assembled channel does not convert the bare probe into a powered output transmitter.
Replacement record	Keep target, actual mounted geometry, electrical length and conditioner identity together.