Plan the selected probe installation

Bently Nevada / 21500-00-28-10-02

Bently Nevada

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Bently Nevada 21500-00-28-10-02 is a 5 mm 7200 proximity probe with a standard 1/4-28 case, 2.8 in case length and 1 m integral lead, terminated by a miniature male coaxial connector.

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

Order sequence

Check 00 unthreaded length, 28 case length, 10 total length and 02 connector against the actual item.

Mounting match

Confirm the machine uses the 1/4-28 standard case and accommodates the 2.8 inch construction.

Function

Establish the required static-position or dynamic-displacement monitor function before installing the channel.

Configuration checkpoint	Selected item
Sensing tip diameter	5 mm
Tip construction	Fiberglass
Mounting type	Standard forward mount
Case thread	1/4-28
Unthreaded length	0.0 in (00)
Overall case length	2.8 in (28)

Additional engineering checks

Review item	Technical basis
Thread and mounting	The standard 21500 construction is 1/4-28, not the 3/8-24 interface of the 21504 construction.
Case selection	The 28 case is 2.8 inches; the 5 mm 1/4-28 construction has a maximum case-length selection of 4 inches.
Integral lead limit	The maximum overall length for the 5 mm probe is 1 m; the selected 10 option is at this nominal limit.

Apter Power technical support

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Prepare the cable combination

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

Integral lead

The nominal 1.0 m total length has a +0.25/-0.10 m tolerance. Include it in the combined electrical length.

Conditioner

Choose the Proximitor for the installed 5 m or 9 m complete chain, not merely for available cabinet space.

Connector

Use the miniature male coaxial connection and protect the joint while routing the unarmored cable.

Readiness check	Practical criterion
Match the thread	Confirm a 1/4-28 machine connection. Do not substitute a larger probe case solely because the monitoring purpose is similar.
Check the selected case	Allow for the 2.8 inch case and 0.0 inch unthreaded section when comparing the installed geometry.
Retain the coaxial connector	Use the miniature male coaxial connection selected by 02 and protect it against contamination and mechanical stress.

Additional engineering checks

Review item	Technical basis
Selected tip	The 5 mm probe construction uses fiberglass, not the PPS material of the 8 mm construction.
Integral length	The selected nominal 1 m length permits +0.25/-0.10 m tolerance.
Coaxial interface	The probe/extension system uses 95 ohm coaxial cable; keep the selected miniature connector arrangement.
Physical protection	The 21500 construction has no lead armor; protect the junction and route from mechanical abuse.

Mount without damaging the tip

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Case geometry

The unthreaded selection is 0.0 inches. Compare the threaded case and machine face before establishing the operating point.

Tip construction

The 5 mm construction uses fiberglass. Protect the sensing face and do not apply 8 mm PPS chemical-contact assumptions.

Cable junction

Avoid physical abuse at the integral lead transition. Keep the selected connector accessible for a controlled service operation.

Installation hold point	Required review
Select the electrical length	Include the nominal 1 m integral lead and its specified tolerance when checking the extension/conditioner combination.
Protect the fiberglass tip	Avoid mechanical abuse of the sensing face and unarmored cable junction; do not transfer 8 mm PPS corrosion ratings to this tip.
Recheck calibrated response	After component or target changes, verify gap and scale factor for the complete 7200 channel before monitoring service.

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
Unthreaded selection	00 selects 0.0 inch unthreaded length in the English standard-mount ordering scheme.
Case selection	28 selects 2.8 inches overall case length in the English standard-mount scheme.
Connector selection	02 selects the miniature male coaxial connector; it is a connection option, not approval evidence.
Lead and extension	A nominal 1 m probe lead still requires the correct extension/conditioner combination for the selected complete system.

Validate the complete system

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

Reference response

A matched calibrated 7200 system has a nominal 200 mV/mil scale factor and an 80 mil measuring span.

Accuracy boundary

Assess +/-4% calibrated system scale factor separately from the +/-9.5% figure including interchangeability errors.

Dynamic check

DC to 10 kHz is the complete-system response; confirm monitor configuration and the full chain before using vibration data.

Acceptance boundary	Verification focus
Coaxial cable impedance	95 ohms
Probe/extension operating limits	-34 to +177 deg C
Relative humidity	Up to 95%; noncondensing
System linear measuring span	80 mils (2.0 mm), with matched conditioner
System scale-factor accuracy	+/-4% calibrated as a system; +/-9.5% including interchangeability errors

Additional engineering checks

Review item	Technical basis
Calibrated scale factor	The nominal 200 mV/mil scale factor permits +/-4% when calibrated as a system.
Interchangeability	Including component interchangeability, the scale-factor allowance is +/-9.5%.
System linearity	Calibrated linearity is within 0.8 mil of the nominal straight line, or 2.3 mil including interchangeability errors.
Response limit	The DC-to-10 kHz response has -5% at 10 kHz under the stated complete-system conditions.

Maintain repeatable measurements

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Target changes

Check response after changing the observed target material; the reference setup uses AISI 4140 steel at +22 deg C.

Environment

Keep the probe/extension within -34 to +177 deg C and humidity within the noncondensing limit. The Proximitor has its own thermal rating.

Channel handover

Retain the exact probe code, actual case geometry, lead/extension selection and conditioner identity with the measured baseline.

Related Bently Nevada products

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

Product reference	Explore
Bently Nevada 21500-00-32-10-00	View Bently Nevada 21500-00-32-10-00
Bently Nevada 21500-00-12-10-02	View Bently Nevada 21500-00-12-10-02
Bently Nevada 21500-00-32-05-02	View Bently Nevada 21500-00-32-05-02

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

Additional engineering checks

Review item	Technical basis
Humidity	The allowed environment is up to 95% relative humidity, noncondensing.
Thermal zone	The probe and extension range is -34 to +177 deg C; apply the conditioner rating separately.
Target material	AISI 4140 steel is the reference target; verify response for the actual machine surface.
System retention	Do not select extension length only from mechanical reach; retain the intended 5 m or 9 m calibrated chain.