Bently Nevada 330881-28-07-155-06-02

01 Integrated transducer architecture

A local probe and conditioner assembly

PROXPAC XL combines the proximity probe and Proximitor sensor at the machine measurement point. The probe cable remains within the sleeve and housing, and the conditioner is installed in the cover. This arrangement removes the separate probe extension cable and remote conditioner enclosure used in a conventional distributed transducer chain.

Selected mechanical arrangement

Element	Configuration
Probe	3300 XL 8 mm
Standoff adapter	70 mm
Probe penetration	155 mm
Fittings kit	One 3/4-14 NPT fitting, one stainless 3/4-14 to 1/2-14 NPT reducer, two plugs
Mounting thread	3/4-14 NPT
Proximitor location	Integrated in the housing cover
Extension cable	Not required between the internal probe and conditioner

Functional consequences

Short internal circuit
The selected assembly uses a one-metre 3300 XL 8 mm probe circuit.

Local signal conversion
The housing-mounted Proximitor provides a voltage proportional to gap.

Field connection
Shielded wiring carries power and conditioned output to the monitor.

Service interface
The sleeve, cover and field connection each have separate mechanical responsibilities.

Standoff and penetration have different roles

The 70 mm standoff sets housing separation from the mounting surface; the 155 mm penetration places the probe within the machine. Treat these as separate mounting requirements rather than a single interchangeable length.

Position and vibration information

The average output indicates static gap while the varying component represents relative target motion. Configure the receiving monitor for the intended radial vibration, position or reference measurement.

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02 Displacement performance and target geometry

Transfer characteristic

Characteristic	Value or condition
Linear range	2 mm (80 mils)
Approximate gap interval	0.25 to 2.3 mm
Approximate output interval	-1 to -17 V DC
Recommended gap	1.27 mm
Nominal scale factor	7.87 V/mm (200 mV/mil)
Incremental scale-factor tolerance	±5%, including interchangeability error
Scale-factor test conditions	0–45 °C, altitude up to 2000 m, 0.25 mm increments
Straight-line deviation	Less than ±0.025 mm with components at 0–45 °C
Frequency response	0–10 kHz, +0/-3 dB, up to 305 m field wiring

Target planning limits

Geometry	Boundary
Flat target diameter	15.2 mm minimum
Shaft diameter	50.8 mm minimum; 76.2 mm recommended
Typical axial tip separation	At least 40 mm
Typical radial tip separation	At least 38 mm

The accuracy statement has conditions

The ±5% incremental scale factor includes interchangeability error and is measured in 0.25 mm increments over the linear range, with the stated temperature and altitude conditions. It is not an unconditional value for any target geometry or installation environment.

Cross-talk and small shafts

Two nearby systems can interact electromagnetically. Shaft diameters below 76.2 mm generally change scale factor, even where the minimum mechanical target size is met. Check the target and neighbouring probes before accepting nominal sensitivity for an installed channel.

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03 Power and signal interfaces

Conditioner electrical data

Item	Value
Supply without barriers	-17.5 to -26 V DC
Supply with barriers	-23 to -26 V DC
Maximum consumption	12 mA
Output resistance	50 Ω
Supply sensitivity	Less than 2 mV/V
Reduced-range condition	Supply more positive than -23.5 V
Internal probe resistance	7.59 ±0.50 Ω for the one-metre lead

Field-wiring requirements

Item	Requirement
Conductor area	0.2–1.5 mm²
Wire gauge	16–24 AWG
Construction	Shielded three-conductor cable; tinned field wiring recommended
Maximum route length	305 m between Proximitor and monitor
High-frequency assessment	Longer routes require evaluation of signal roll-off

Internal cable versus field wiring

The internal probe lead belongs to the calibrated proximity circuit. The external field wiring belongs to the conditioned-signal connection. Adding a conventional probe extension cable is not equivalent to extending the field wiring and would change the intended transducer arrangement.

Voltage margin and linear range

A supply more positive than -23.5 V can reduce the available linear range. Measure supply at the installed conditioner rather than relying only on the power-supply output setting. Barrier-equipped circuits require the stated -23 to -26 V supply range.

Continuity is one diagnostic only

Probe resistance does not establish conditioner operation or voltage-to-gap conversion.

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04 Materials, environment and sealing

Assembly materials

Part	Material
Probe tip	PPS
Probe case	AISI 304 stainless steel
Housing	UV-resistant, glass-reinforced PPS with conductive fibers
Sleeve and retaining chain	AISI 304 stainless steel
Outer sleeve and retaining screws	AISI 303 stainless steel
Sleeve O-ring	Neoprene

Environmental and tightening boundaries

Condition	Limit
Probe operating temperature	-52 to +177 °C
Housing and Proximitor operating temperature	-52 to +100 °C
Assembly storage temperature	-52 to +105 °C
Relative humidity	100% condensing, non-submersible, with protected connectors
Housing ingress protection	IP66; hose-directed water protection under Type 4X
Retaining nut torque	29.5 N·m recommended
Probe sleeve locknut torque	39.3 N·m recommended

Ingress protection is not pressure containment

The housing protects against hose-directed water but does not resist internal or external pressure. The probes are not pressure-tested before shipment. Provide application-specific containment for liquids and gases rather than interpreting IP66 as a process-pressure rating.

Moisture through conduit

A properly sealed cover does not prevent water that travels through the conduit from reaching the housing. Assess the entire conduit route and unused entries, not only the housing lid.

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05 Technical questions and system decisions

Questions for the integrated arrangement

Where does 330881-28-07-155-06-02 convert the probe signal before sending it to the monitor?
The Proximitor sensor is integrated into the housing cover. It conditions the internal probe signal locally, so the external connection carries the conditioned output to the monitor.

What is the difference between the 70 mm standoff and 155 mm penetration on 330881-28-07-155-06-02?
The standoff separates the housing from the machine mounting surface. Penetration determines the probe reach into the machine. Check these two mounting requirements independently.

Which conduit interfaces are included in the 06 kit supplied with 330881-28-07-155-06-02?
The kit includes one 3/4-14 NPT fitting, a stainless-steel 3/4-14 NPT to 1/2-14 NPT reducer, and two plugs for unused entries.

Does the IP66 rating make 330881-28-07-155-06-02 a process-pressure enclosure?
No. IP66 addresses environmental ingress. The plastic housing does not resist internal or external process pressure, and the installation must safely contain a possible probe leak.

Integration decisions

Decision	Technical assessment
Mounting position	Check the 70 mm standoff, 155 mm penetration and 3/4-14 NPT mounting separately.
Temperature	Apply the housing and conditioner limit as well as the probe limit.
Receiving channel	Use the correct sensitivity, range, units and gap indication.
Service plan	Keep field wiring, cover-mounted conditioner and probe sleeve identities clear.

Other proximity measurement arrangements

Bently Nevada 330103-00-07-05-02-CN

Bently Nevada 330173-00-03-10-02-CN

Comparison is not interchangeability

The separate probe pages describe distributed measurement arrangements. Compare their mechanical installation, electrical length and signal-conditioning requirements before considering a different architecture.