Bently Nevada 991-25-70-01-00

01 Function and selected configuration

Product function

Bently Nevada 991-25-70-01-00 converts shaft thrust movement into a proportional current-loop signal while retaining a separate diagnostic gap output. The selected 25–0–25 mils scale, initial probe gap and receiving-channel direction work together to define the usable measurement.

Selected configuration

The selected full-scale range is 25–0–25 mils, with 35 mm din-rail clips for mounting. The transmitter includes the Proximitor function and accepts one non-contacting 3300 NSv probe with its matched extension cable. It therefore needs no additional external Proximitor Sensor in this measurement chain.

Functional path

Shaft axial movement	3300 NSv probe / cable	991 integrated conditioner	4–20 mA control input

Thrust scale	25–0–25 mils
Transducer circuit	7.0 m matched 3300 NSv system
Mounting	35 mm DIN-rail clips

The two-wire loop operates with 12–35 VDC at the transmitter terminals and provides 4–20 mA over the selected range. Total load is limited by the available supply voltage, with a specified maximum of 1000 Ω at 35 V. Independent zero and span adjustments support loop setup, while the TEST pin allows a variable DC input to check the loop separately from the mechanical transducer.

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02 Technical operating envelope

Measurement range	25–0–25 mils
Electrical system length	7.0 m
Signal output	4–20 mA; two-wire loop
Terminal supply	12–35 VDC
Loop load	Maximum 1000 Ω at 35 VDC
Current limiting	23 mA typical
TEST-input accuracy	±1.5% full scale typical; 250 Ω loop

Not OK output	<3.6 mA within 100 µs
Signal recovery	Within 0.1 s
Diagnostic impedance	10 kΩ; calibrated for 10 MΩ
Diagnostic cable	Maximum 3 m at BNC output
Prox Out linear range	0.25–1.65 mm
Operating temperature	-35 to +85 °C
Mounting	35 mm DIN-rail clips

Electrical specifications use the stated reference temperature, target and transducer conditions. TEST-loop accuracy does not include arbitrary probe, target or installation error.

Signal interpretation

Include all cable and receiver resistance in the loop-load calculation. Rmax = 43.5 × (Vps − 12) Ω, with the stated 1000 Ω limit at 35 V; excessive resistance prevents full-scale output.

Interface boundary

PROX OUT is not isolated from the 4–20 mA loop. Use the designated test adapter for grounded AC-powered equipment and account for the diagnostic signal polarity.

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03 System integration and applications

Compressor thrust trending

Convert the selected 25–0–25 mils axial movement into a current signal for the machine control input.

Compact NSv measurement

Use the matched NSv probe arrangement where the measurement location has limited physical clearance.

Current-loop integration

Connect to a correctly scaled receiver while respecting supply voltage and the complete loop-load resistance.

Isolated diagnostic testing

Use the diagnostic gap signal through the specified adapter when AC-powered test equipment is connected.

System and supply context

The 991-25-70-01-00 transmitter works with one matched 3300 NSv probe and extension cable. Probe, cable, test adapter and receiving equipment are separate unless itemized.

Application boundary

Use the loop for axial-position measurement on appropriate compressors, pumps, motors or fans. Protection alarming and logic belong to the receiving machinery control system; the transmitter does not reproduce every function of a continuous monitor.

Why does 991-25-70-01-00 need correct probe gap at both thrust extremes?

A poor initial gap can prevent the loop from reaching full scale in one direction. Confirm the intended normal and counter-direction travel within the usable transducer range before setting zero and span.

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04 Engineering selection decisions

How should the receiving scale be set for 991-25-70-01-00?

Use the selected 25–0–25 mils full-scale thrust range with the 4–20 mA loop. Set the receiving channel to the same engineering-unit range and confirm direction during the controlled test.

How much total loop resistance can 991-25-70-01-00 drive from a 24 V supply?

The maximum-load relation is R = 43.5 × (supply voltage − 12) Ω, giving 522 Ω at 24 V. Include receiver and cable resistance; excessive resistance prevents the output reaching 20 mA.

Does 991-25-70-01-00 require an additional external Proximitor Sensor?

No. Its integrated Proximitor function conditions the matched 3300 NSv probe and extension cable directly. The transmitter still requires the correct 7 m electrical transducer system.

How is the diagnostic signal loading of 991-25-70-01-00 specified?

PROX OUT has a 10 kΩ output impedance and is calibrated for a 10 MΩ load. Test-equipment loading and isolation therefore matter when interpreting the diagnostic voltage.

Check the load budget	Include cable and receiver resistance in the supply-dependent load limit.
Isolate diagnostic instruments	Use 122115-01 for grounded AC-powered equipment on PROX OUT.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of 991-25-70-01-00 is not confirmed. Product availability alone does not establish its lifecycle status.

Replacement assessment

Match 991-25-70-01-00, the 25–0–25 mils thrust range, 7 m electrical length and 35 mm din-rail clips. Preserve probe gap, receiving scale and the actual approval markings.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; it does not replace manufacturer instructions.

Technical basis

Bently Nevada 991 Thrust Transmitter Datasheet, 141618 Rev. R.

Related product navigation

- Bently Nevada 991-25-50-01-05
- Bently Nevada 991-06-70-01-CN

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

Product enquiries