Bently Nevada 990-04-70-01-01

01 Function and selected configuration

Product function

Bently Nevada 990-04-70-01-01 brings radial shaft motion into the machinery controller through a powered current loop, while retaining a separate diagnostic connection for the probe signal.

Selected configuration

The selected configuration combines a 0-4 mils peak-to-peak measurement span, a 7.0 m transducer system and 35 mm din-rail clips. The integrated proximity conditioner accepts one compatible 3300 NSv probe with its matched extension cable; the probe lead and extension together establish the calibrated length.

Functional path

NSv probe / shaft gap	Matched 7.0 m chain	990 conditioner	4-20 mA receiver

Measurement span	0-4 mils peak-to-peak
Transducer system	7.0 m, compatible 3300 NSv probe and cable
Mounting	35 mm DIN-rail clips

The two-wire loop supplies power and transmits peak-to-peak shaft vibration amplitude as 4-20 mA. The receiving control system supplies the alarm and protection logic. Non-interacting zero and span adjustments support loop calibration, while the TEST input accepts a AC signal generator for controlled output checks.

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02 Technical operating envelope

Measurement	Radial vibration
Full-scale span	0-4 mils peak-to-peak
Electrical system length	7.0 m
Signal output	4-20 mA; two-wire
Terminal supply	+12 to +35 VDC
Maximum loop resistance	1000 ohms at 35 VDC; includes cable

Frequency response	5 Hz-6000 Hz; +0/-3 dB
Current limit	23 mA typical
Mounting	35 mm DIN-rail clips
Transmitter temperature	-35 to +85 degrees C
Fault current	Below 3.6 mA

Loop supply and burden apply at the transmitter terminals. Temperature and performance are conditional on the matched components; probe limits are not transmitter-body limits.

Signal interpretation

The 0-4 mils peak-to-peak range is the selected process-loop measurement. The separate dynamic output is a diagnostic signal, not a second isolated process loop.

Interface boundary

The 7.0 m electrical length belongs to probe plus extension. Loop wiring, diagnostic lead length and probe cable length are different constraints.

Why should a below-3.6 mA output from 990-04-70-01-01 be investigated as a fault state?

It is the Not OK/Signal Defeat level or initial power-up inhibit, rather than a normal point within the 4-20 mA measurement range.

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03 System integration and applications

Machine-point signal conditioning

Convert one radial vibration measurement into a 4-20 mA input for the controller.

Calibrated loop renewal

Retain the 0-4 mils peak-to-peak receiver range and 7.0 m electrical chain when replacing the transmitter.

Probe-signal diagnosis

Observe the dynamic and gap signal with the specified diagnostic connection and instrument isolation.

Protection-loop verification

Use the TEST input with a AC signal generator to compare signal output and receiving indication.

System and supply context

990-04-70-01-01 connects a matched NSv probe and extension to a powered current-loop receiver. Probe, cable, test adapter and receiving control equipment are separate unless included in the quotation.

Application boundary

Use the 0-4 mils peak-to-peak scale for shaft-vibration supervision of the assigned machine point. Protective alarm logic remains in the receiving system.

How does the DIN fitting of 990-04-70-01-01 differ from the combined mounting option?

Its 01 mounting code specifies 35 mm DIN-rail clips. The combined clips-and-screws arrangement belongs to mounting code 03.

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04 Engineering selection decisions

Which engineering value represents 20 mA from 990-04-70-01-01?

The selected endpoint is 4 mils peak-to-peak, approximately 100 micrometres peak-to-peak. The receiver should interpret 4 mA as the zero-amplitude end of the span.

What is the relationship between 990-04-70-01-01 and the external protection controller?

The transmitter conditions one proximity measurement into a proportional current. The controller interprets that current and executes alarm or trip logic.

What ambient temperature range applies to the transmitter body of 990-04-70-01-01?

The transmitter operating range is -35 to +85 degrees Celsius. Probe temperature limits are separate and must not be used as the transmitter enclosure limit.

How should zero and span be verified on 990-04-70-01-01 after replacement?

Exercise the controlled test input through the required loop points and compare measured current with receiver indication. Retain the 0-4 mil scale and verify both endpoints before release.

Keep test grounding controlled	The diagnostic connection is non-isolated.
Recognize Not OK	Distinguish below-3.6 mA fault and startup states from valid measurements.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of 990-04-70-01-01 is not confirmed. Apter Power availability is assessed separately from manufacturer lifecycle status.

Replacement assessment

Match the 0-4 mils peak-to-peak scale, 7.0 m length, 35 mm din-rail clips and supplied approval markings. Keep the receiver alarm scale with the measurement.

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 990 Vibration Transmitter, 141612 Rev. Y.

Related product navigation

- Bently Nevada 991-06-XX-01-00 MOD:169955-01
- Bently Nevada 991-25-50-01-05

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

Product enquiries