Bently Nevada 330525-CN

01 Function and selected configuration

Product function

Bently Nevada 330525-CN converts vibration transmitted through a machine casing into a velocity signal, supporting measurements where a rugged sensor and protected field connection are needed.

Selected configuration

The Velomitor XA design uses a rugged case and weatherproof mating cable arrangement for installation without an additional sensor housing. IP65 and NEMA 4X performance depend on correct installation with the appropriate mating cable; the connector assembly is part of that environmental protection.

Functional path

Housing motion	Piezo-velocity sensor	Powered cable circuit	Velocity monitor

Signal output	3.94 mV/mm/s (100 mV/in/s), ±5%
Response	4.5–2000 Hz, ±3 dB
Construction	isolated 316L case with hermetic two-pin connector

A useful housing measurement depends on a location that transmits the rotor vibration of interest. Mounting stiffness, orientation and cable restraint affect the acquired signal. The case is electrically isolated, while the two-pin interface carries the powered signal circuit to a compatible monitoring channel.

330525-CN / Technical operating envelope

02 Technical operating envelope

Velocity sensitivity	3.94 mV/mm/s (100 mV/in/s), ±5%
Frequency response	4.5–2000 Hz, ±3 dB
Flat response band	6–1000 Hz, ±0.9 dB
Velocity range	1270 mm/s peak
Amplitude linearity	±2% to 152 mm/s peak
Transverse sensitivity	Less than 5%
Supply voltage	-22 to -30 VDC

Bias current	2.5–6.0 mA
Output bias	-12 ±3.0 VDC, referenced to Pin A
Dynamic output impedance	Less than 2400 ohm
Operating temperature	-55 to +121 °C
Connector	2-pin MIL-C-26482, hermetically sealed
Case isolation	Electrically isolated
Mounted resonant frequency	Greater than 12 kHz

Sensitivity is specified at 100 Hz and +20 to +30 °C. The ±3 dB response, tighter flat band and peak velocity limit describe different boundaries. Installed housing response and mounting integrity also affect the measurement; the sensor does not directly measure shaft-relative displacement.

330525-CN / System integration and applications

03 System integration and applications

Bearing-housing vibration

Acquire a velocity signal from a suitable housing surface that transmits the relevant machine vibration.

Exposed sensor positions

Use the appropriate mating cable and protection assembly when moisture or dust exposure requires the rugged XA construction.

Remote monitor connections

Route the powered sensor circuit to the receiving monitor using the specified cable type and an assessed cable length.

Machine condition trending

Compare velocity measurements at a consistent location, direction and bandwidth to track changes over time.

System and supply context

The sensor mounts on the machine housing and connects to a compatible powered velocity input. Cable, boot, clamps and monitoring hardware are separate unless included in the quotation.

Application boundary

Use a mounting location that transmits the vibration of interest. The sensor measures casing motion at that point, rather than direct shaft displacement relative to the bearing.

Which frequency band gives 330525-CN the tighter amplitude response?

The 6–1000 Hz band is specified at ±0.9 dB. Its broader 4.5–2000 Hz response is specified at ±3 dB, so the two bands should not be treated as having the same amplitude tolerance.

330525-CN / Engineering selection decisions

04 Engineering selection decisions

Does 330525-CN measure casing velocity or shaft-relative displacement?

It measures motion transmitted through the mounting surface and produces a velocity-proportional signal. A shaft-relative displacement measurement requires a proximity-transducer arrangement.

What powered-input circuit is required by 330525-CN?

The sensor requires -22 to -30 VDC with 2.5–6.0 mA bias current. Confirm compatibility with the receiving velocity input rather than connecting it as an unpowered voltage source.

What separates peak range and linearity on 330525-CN?

The velocity range is 1270 mm/s peak, while the ±2% amplitude-linearity statement applies only through 152 mm/s peak. The tighter linearity must not be extended to the full peak range.

Why must the mounting point of 330525-CN transmit rotor vibration effectively?

A flexible or poorly selected housing location can attenuate or alter the vibration reaching the sensor. A secure, suitable mounting surface is necessary for the signal to represent the machine behavior of interest.

Weather protection	Install the correct mating cable, boot and clamps; a bare connector does not establish the stated protection.
Cable restraint	Retain at least 1.5 in bend radius and prevent movement from loading the sensor connection.

330525-CN / Configuration boundary and references

05 Configuration boundary and references

Lifecycle and support

Current production and end-of-support status are not confirmed for this exact configuration.

Replacement assessment

Match the velocity sensitivity, powered two-wire input, mounting interface and mating cable arrangement. A proximity probe or a raw acceleration sensor is not an equivalent electrical replacement.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains configuration and selection boundaries. The independent installation guide organizes preparation, connection, testing and handover. It does not replace the applicable manufacturer installation instructions.

Technical basis

Bently Nevada 330525 Velomitor XA Piezo-velocity Sensor, 141633 Rev. M.

Related product navigation

- Bently Nevada 330500-02-00
- Bently Nevada 330500-02-04
- Bently Nevada 330500-00-00

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

Product enquiries