Bently Nevada 330525-01

01 Piezo-velocity Sensor / system role

Product function

Bently Nevada 330525-01 combines a rugged field connection with velocity-proportional sensing where the installation needs protection against dust and moisture.

Selected configuration

Nominal sensitivity is 3.94 mV/mm/s, equivalent to 100 mV/in/s, with ±5% tolerance at the specified calibration conditions. The response band is 4.5–2000 Hz within ±3 dB, with a flatter 6–1000 Hz region within ±0.9 dB.

Functional path

Housing motion	Piezo-velocity sensor	Mating cable assembly	Velocity monitor

Sensitivity	100 mV/in/s nominal
Response	4.5–2000 Hz within ±3 dB
Installation	Weatherproof mating-cable assembly

The sensor requires −22 to −30 V DC and a 2.5–6.0 mA bias current. Output bias is −12 ±3 V DC over temperature referenced to pin A. Signal polarity, supply polarity and the receiving channel configuration must be kept consistent.

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02 Technical operating envelope

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
Supply	−22 to −30 V DC
Bias current	2.5–6.0 mA
Output bias	−12 ±3 V DC over temperature, referenced to pin A

Dynamic impedance	<2,400 Ω
Velocity amplitude	1,270 mm/s peak
Amplitude linearity	±2% to 152 mm/s peak
Operating temperature	−55 to +121 °C
Connector	2-pin MIL-C-26482
Case material	316L stainless steel

330525 performance is specified at +20 to +30 °C and 100 Hz unless stated otherwise. Environmental sealing depends on proper installation with the mating cable; approval applicability follows the actual -01 marking.

Operating interpretation

The 1,270 mm/s peak amplitude limit and the ±2% linearity statement to 152 mm/s peak describe different performance boundaries.

Configuration boundary

Match the -01 approval marking, mating cable, supply circuit, sensitivity and housing mount before replacing the sensor.

How does 330525-01 polarity relate to physical motion?

Pin A goes positive relative to pin B when the sensor case moves toward the connector. Keep that convention when comparing phase or polarity.

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03 System integration and applications

Outdoor housing vibration

Use the correctly sealed mating-cable arrangement in a suitable non-submerged installation.

Low-frequency velocity monitoring

Measure within the 4.5 Hz lower response boundary with the appropriate tolerance.

Rugged process machinery

Use the stainless-steel sensor body and compatible field connection for housing measurements.

Velocity-channel replacement

Preserve sensitivity, negative supply and polarity when restoring an installed channel.

System and supply context

Bently Nevada 330525-01 operates within the following defined system context. Verify 330525-01 and the actual approval marking and connector assembly.

Application boundary

The applications below describe its technical role. Select associated hardware and configuration for the actual installation.

What velocity scaling is required for 330525-01?

Use 3.94 mV/mm/s, equivalent to 100 mV/in/s, at the stated nominal conditions rather than another Velomitor variant's sensitivity.

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04 Engineering selection decisions

Does the IP65/NEMA 4X installation rating of 330525-01 apply with an open connector?

No. It requires proper installation with the mating extension-cable assembly. The connector interface is part of the environmental boundary.

Which supply polarity does 330525-01 require?

The specified supply is negative, −22 to −30 V DC, with 2.5–6.0 mA bias current. Preserve the applicable wiring and polarity.

Why should a reading at 5 Hz on 330525-01 use the broader response tolerance?

5 Hz lies inside the 4.5–2000 Hz ±3 dB band but outside the flatter 6–1000 Hz ±0.9 dB band.

What should be checked if 330525-01 has abnormal DC bias?

Check supply voltage, bias current, polarity and cable connections against the specified circuit before interpreting the dynamic signal as valid vibration.

Inspect cable routing	Maintain the specified cable bend allowance and protect the joint from mechanical load. Keep the connection intact in wet or dusty locations.
Retain the environmental boundary	Save mounting position, cable assembly, electrical measurements and verification conditions. Confirm that the application remains non-submerged and within the operating-temperature range.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of 330525-01 is unconfirmed. Apter Power availability is assessed separately from manufacturer lifecycle status.

Replacement assessment

Match the -01 approval marking, mating cable, supply circuit, sensitivity and housing mount before replacing the sensor.

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; use it together with the applicable manufacturer instructions.

Technical basis

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

Related product navigation

- Bently Nevada 330180-91-05
- Bently Nevada 330101-00-08-05-02-05

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

Product enquiries