Bently Nevada 330425-01-CN

Casing-acceleration sensing and replacement verification

Position in the measuring chain

Machine casing	Vibration is transmitted through the bearing housing or case.
330425-01-CN	Converts axial casing acceleration to a proportional electrical signal.
Interconnect	Carries excitation and signal through a compatible three-socket connection.
Monitor channel	Powers, conditions and trends the selected acceleration measurement.

Before work starts

01 **Record the installed identity**
Capture the complete sensor marking, approval label, cable part and monitor-channel configuration.

02 **Check the measurement location**
Confirm that the mounting point transmits the machine vibration of interest.

03 **Plan the replacement boundary**
Separate the sensor, cable and monitor in the work pack; the offered item is the transducer.

Evidence boundary

The CN suffix is a country-specific ordering option. Determine any hazardous-area suitability from the actual supplied marking, applicable drawing and associated circuit.

Why the 330425 design is selected

Higher range	The 330425 offers 75 g peak within the specified frequency span.
Lower sensitivity	Its 25 mV/g sensitivity differs from the 330400 100 mV/g design.
Installed implication	Set the monitor scaling for the 330425 selection; do not transfer a 330400 trend unchanged.

Acceptance question

Does the installed location transmit the fault frequency of interest to the housing? Record an operating baseline at that location before releasing the channel.

330425 acceleration and excitation

Sensitivity	25 mV/g ±5% at reference conditions
Peak acceleration span	75 g within 10 Hz to 15 kHz
Amplitude linearity	±1% to 75 g peak
Broadband noise floor	0.01 g rms, 10 Hz to 15 kHz
Frequency response, ±3 dB	10 Hz to 15 kHz
Frequency response, ±10%	30 Hz to 10 kHz
Transverse sensitivity	Less than 5% of axial
Mounted resonant frequency	Greater than 30 kHz
Input supply	−24 ±0.5 V DC
Nominal bias current	2 mA
Output bias voltage	−8.5 ±0.5 V DC
Case grounding	Isolated
Connector	3-pin MIL-C-5015 receptacle
Mounting torque	4.1 N·m
Operating temperature	−55 to +121 °C

Interpret the two response bands correctly

±3 dB band

The published wider response is 10 Hz to 15 kHz. The usable 75 g peak range is tied to this frequency span; vibration above it can reduce usable amplitude range.

±10% band

Use the narrower 30 Hz to 10 kHz band when comparing trend amplitude with a tighter response tolerance. Retain the monitor filter and operating state in the comparison.

Reference and installation conditions

Electrical reference	Specified at +20 to +30 °C and 100 Hz unless a parameter states otherwise.
Transverse response	Less than 5% of axial; align the sensing axis to the intended motion.
Resonance	Mounted resonance exceeds 30 kHz; above-band vibration can reduce usable amplitude span.

Mounting and connection sequence

01 **Locate the sensing point**
Use the approved casing or bearing-housing point and record sensor orientation.

02 **Prepare the surface**
Inspect the contact face and fastener condition; follow the specified surface finish.

03 **Seat the integral stud**
Fit the 01 1/4-28 UNF stud without using a metric mounting thread.

04 **Apply the documented torque**
Tighten to 4.1 N·m; verify the sensor is fully seated and not loose.

05 **Connect the interconnect**
Mate the three-pin connector and route the cable with protection against abrasion and moisture.

06 **Verify the excitation**
Check the channel's negative DC supply and polarity against the approved wiring drawing.

Sensor and cable boundaries

Case	316L stainless steel and electrically isolated.
Sensor environment	−55 to +121 °C; equivalent IP68 for sensor body only.
Interconnect	Cable selection and protection are independent of the sensor-only IP rating.
Cable length	Manufacturer allows up to 305 m without signal degradation under its stated conditions.

Cable selection boundary

16710 series	Armored three-conductor shielded interconnect with a three-socket plug and terminal lugs.
Other variants	The manufacturer also lists 130539 and 16925 cable constructions. Confirm the installed termination before selecting one.
Acceptance	Record the actual cable order code; neither sensor rating nor CN suffix identifies the supplied cable.

Fault-isolation route

No valid bias	Verify −24 V DC excitation, wiring polarity and connector continuity before changing the sensor.
Low high-frequency trend	Check mounting face, orientation, stud torque and monitor bandwidth.
Unexpected stopped-machine reading	Inspect cable motion, shielding, grounding and monitor noise.
Changed response after cable replacement	Check cable construction, route, connection and total installed length.
Unstable casing trend	Compare machine operating conditions and the established measurement location.

Commissioning checks

01 **Electrical baseline**
Record supply and output bias in the installed monitor circuit.

02 **Functional baseline**
Compare acceleration under a known operating condition with the approved historical trend.

03 **Documentation**
Retain the sensor marking, location, cable identity, monitor setup and acceptance result.

Do not infer a new channel limit from a sensor swap

Protection thresholds and alarm filters belong to the approved monitor configuration. Compare settings before release.

Additional service decisions

Why could 330425-01-CN show lower high-frequency vibration after replacement?

Inspect seating, mounting surface and stud torque, then compare the new location and cable with the original installation. Poor coupling can reduce frequency response even when the sensor is electrically healthy.

How can an abnormal bias reading on 330425-01-CN be isolated?

Check the sensor supply and output bias at the approved monitor connection, then inspect cable continuity and connector condition. Compare the reading with the installed channel baseline before replacing the sensor.

Acceptance record to retain

Identity	330425-01-CN marking and its 01/CN options.
Mechanical	Location, mounting orientation, surface condition and torque.
Electrical	Supply, bias, cable identity and monitor input configuration.
Performance	Noise and vibration trend at a recorded machine state.
Approval	Actual sensor marking and associated circuit review if hazardous-area use is intended.

Engineering answers

When is the wider response band of 330425-01-CN relevant to a trend?

Use the manufacturer's ±3 dB or ±10% band according to the diagnostic frequency range and monitor configuration. Confirm the same filter and measurement bandwidth before comparing historical values.

How can cross-axis motion affect a 330425-01-CN reading?

Align the sensitive axis to the intended casing-motion direction and document orientation. If machine motion changes direction, compare orthogonal locations; the published transverse response is limited but not zero.

What must be verified before using 330425-01-CN in a hazardous area?

Read the exact supplied approval marking and installation drawing, then check the associated circuit entity parameters and cable conditions. The CN order suffix alone does not establish a particular area classification.

Related Bently Nevada references

Related catalogue entries are navigation references; match each complete order code to its own installation.

- **Bently Nevada 16710-26**
- **Bently Nevada 16710-32**
- **Bently Nevada 330425-01-05**

Discuss the complete marking with Apter Power

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Provide the installed channel, sensor label and cable information for an exact offer.

Technical basis: Bently Nevada 141638 Rev. AB and 108M1756 Rev. AL.