Bently Nevada 177230-02-01-05

01 Define the vibration measurement

Record the monitored quantity

Identify the machine point, expected broadband RMS velocity and control-system scaling. Keep the selected 0–50.8 mm/s range distinct from a peak or acceleration measurement.

Set a valid comparison method

Choose an independent reference with compatible units, detector and bandwidth. A peak value or a different frequency band will not directly verify the loop reading.

Primary output	Broadband RMS velocity
Selected response	10 Hz–1 kHz
Acceptance plan	Stable operating condition and comparable reference

Can the 2.5 V bias on 177230-02-01-05 be interpreted as a vibration amplitude?

No. It is the dynamic-output DC bias relative to pin B. Separate the bias from the vibration waveform using suitable instrumentation and evaluate the AC signal with the correct acceleration sensitivity.

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02 Prepare a repeatable mounting path

Inspect the contact and stud

Select the mounting adapter and prepare the machine contact using the approved installation method. Remove mechanical looseness before attempting to correct an apparent signal problem electrically.

Avoid impact during placement

Where a magnetic base is used, roll it into contact rather than snapping it onto the surface. An abrupt impact can generate a damaging impulse.

Stud mounting torque	4–7 N·m
Contact quality	Secure, reproducible mechanical coupling
Comparison record	Retained measurement point and orientation

Why can a peak-reading vibration instrument disagree with 177230-02-01-05 on the same machine?

This configuration reports broadband RMS velocity. Peak and RMS results are different measurement quantities, and the relationship depends on the waveform. Align units, detector type and bandwidth before comparing readings.

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03 Wire the loop and protect its reference

Identify all three pins

Connect the positive loop to A and the loop return to B. Treat C as the dynamic acceleration signal referenced to B, not as a second current-loop terminal.

Review the instrument grounding

Check the analyzer’s common and input isolation before connecting the dynamic signal. Grounding pin B can short the loop and remove its output.

Excitation	12–30 V DC, current limited to 40 mA
Loop pair	Pins A–B
Diagnostic pair	Pins C–B; B must remain isolated from ground

How should the startup reading of 177230-02-01-05 be assessed?

Allow the specified settling interval before comparing steady values: the output settles within 2% of its final value in less than 15 seconds. Check supply and machine conditions if the stabilized signal remains inconsistent.

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04 Scale and stabilize the plant reading

Allow energization settling

Wait for the specified output stabilization before comparing a steady machine condition. Preserve the test conditions while recording current and the displayed velocity.

Check an intermediate value

For this selected range, a nominal 12 mA corresponds to 25.4 mm/s RMS. A correct endpoint alone does not prove that the receiving channel has the correct offset and span.

Settling criterion	Within 2% of final value in less than 15 s
Live zero	Nominal 4 mA at zero velocity
Midspan check	Nominal 12 mA at 25.4 mm/s RMS

Does the velocity output of 177230-02-01-05 reveal which frequency caused an increase?

The loop reports overall broadband velocity and does not provide a spectrum. Use the separate dynamic acceleration output with an appropriate analyzer to investigate waveform or frequency content, keeping its reference isolated.

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05 Verify diagnostic access without losing the loop

Separate bias from waveform

The dynamic output has a 2.5 V bias and 100 mV/g sensitivity. Use an appropriate measurement setup to distinguish the DC level from vibration content.

Confirm both paths after the test

Remove or retain the analyzer according to the approved arrangement, then verify that the loop signal and plant indication remain stable. Record any change caused by the diagnostic connection.

Waveform check	Correct sensitivity and suitable instrument input
Loop check	No output loss caused by grounding
Handover	Measured condition, reference and connection arrangement recorded

Other Bently Nevada product references

Bently Nevada 330101-00-30-10-01-00

Bently Nevada 330101-00-30-90-02-05

Bently Nevada 330101-00-55-05-11-00

Separate product references; no substitution or compatibility is implied.