Bently Nevada 330525-02

Installation, integration and commissioning field workflow

Velomitor XA Piezo-Velocity Sensor. 330525-02 uses an integrated piezoelectric sensing element and signal-conditioning circuit to deliver a velocity-proportional output from machine-case motion. Its response is intended for a monitoring channel configured for the Velomitor signal rather than a bare accelerometer input.

01 Exact work package

Complete model	330525-02
Engineering role	Velomitor XA Piezo-Velocity Sensor
Installed-system check	Match the complete marking and host arrangement
Approval option	02; SIRA/CENELEC
Sensitivity	3.94 mV/mm/s ±5%
Frequency response, ±3 dB	4.5 Hz to 2 kHz
Frequency response, ±0.9 dB	6 Hz to 1 kHz
Velocity range	1,270 mm/s peak
Amplitude linearity	±2% to 152 mm/s peak

Before work starts

Confirm the installed drawing, complete supplied code, actual connector and approved monitoring arrangement before isolating the channel. Record the as-found state for a comparable as-left check.

02 Fit and interface

Power requirement	-22 to -30 VDC; 2.5–6.0 mA bias
Output bias	-12 ±3 VDC relative to pin A
Dynamic output impedance	Less than 2,400 Ω
Case grounding	Isolated
Case material	316L stainless steel
Connector	2-pin MIL-C-26482, hermetically sealed
Operating temperature	-55 to +121 °C
Maximum mounting torque	45 N·m
Minimum cable bend radius	1.5 in

The sensor case is isolated from the signal circuit and the sealed stainless-steel construction supports machine-mounted service. The exact order suffix determines the selected approval arrangement; confirm the unit label and site control drawing when hazardous-area installation is involved.

During replacement, the mounting surface, connector wiring, supply bias and channel polarity matter as much as the sensor body. Record a baseline vibration trend, test the installed bias and then compare the returned channel response with the machine's approved operating record.

System and application map

Machine casing vibration

Monitor vibration at a rigid casing or bearing location chosen by the machine design.

Existing Velomitor channel

Replace a sensor only after matching supply, pin polarity and full suffix to the installed channel.

Condition-monitoring trend

Compare measured velocity trends under like machine conditions; consider the published response band at low speed.

Maintenance diagnosis

Separate supply, cable, mount and sensor faults by checking the output bias and physical connection in sequence.

03 Fit, connect and prove

Confirm the offered suffix	Match the full order code and approval marking with the installed record.
Inspect the mounting surface	Use a clean rigid mounting point and the manufacturer torque limit.
Verify two-pin wiring	Confirm connector engagement, pin mapping and cable strain relief.
Check supply and bias	Measure the channel under load before treating a low signal as a sensor failure.
Protect the cable route	Avoid abrasion, sharp bends and contaminating the connector.
Record a baseline	Save channel bias and comparable vibration trend after return to service.

Acceptance sequence

01 Identify

Compare complete marking and supplied suffixes.

02 Fit

Check connector, mounting or cable route against the installed drawing.

03 Prove

Check the connected channel and document the as-left result.

04 Engineering questions

How should 330525-02 be powered during a bench acceptance check?	Use the manufacturer-specified negative DC bias and current range at the sensor connection. Confirm voltage under load, then compare the output bias with the datasheet before testing dynamic vibration.
What does a reversed dynamic signal from 330525-02 suggest?	The datasheet defines pin A polarity when case motion is toward the connector. Verify pin mapping and channel polarity against the installed wiring before changing monitor configuration.
How can a mounting problem distort 330525-02 readings?	Check that the sensor is mounted on a clean, rigid surface with the specified thread and torque. A loose or flexible mounting changes the mechanical transfer path; compare the signal only after the mount is corrected.

Why can 330525-02 behave differently at low shaft speeds?	Its response is frequency-limited; compare the machine vibration component with the published response band before interpreting low-frequency amplitude. Use a suitable channel and measurement method for the machine's operating speed.
What cable check is useful when 330525-02 has unstable output?	Inspect the two-pin connector, shield continuity and cable route for strain or contamination. Isolate the sensor from the field cable and compare the bias at each end to locate a connection fault.
When should the approval option of 330525-02 be reviewed?	Match the full marked approval code with the installed hazardous-area control drawing and associated monitoring circuit. Do not infer approval from the base sensor family alone.
What should be recorded before replacing 330525-02 in a running monitoring program?	Capture sensor orientation, mounting interface, pin assignment, cable route, channel bias and a representative vibration trend. Recheck these against the replacement after installation.
How should 330525-02 be verified after installation?	Check mechanical security, supply and bias at the connected channel, then compare a controlled machine signal with the documented baseline. Investigate any polarity or amplitude shift before restoring protection settings.

Handover evidence

As-found identity	Record the complete marked code and installed location
Interface evidence	Photograph the fitted connector, mounting and cable route
Pre-work channel	Retain the baseline signal and monitoring configuration
As-left channel	Record the connection check and operating indication
Release decision	Compare the result with the approved machine record

Discuss the complete model and fitted revision with Apter Power.
sales13@apterpower.com | +86 18030235313

Technical basis

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

Other Bently Nevada references

Bently Nevada 330500-00-01 | Bently Nevada 330709-000-090-10-02-00 | Bently Nevada 106765-04