Bently Nevada 330500-02-05

Complete Product Information

Bently Nevada 330500-02-05 is an integrating piezoelectric velocity sensor with an M8 x 1 mounting adaptor. It provides a velocity-proportional output for compatible machinery monitoring inputs.

01 Product identity and verified data

Complete model	330500-02-05
Product type	Velomitor piezo-velocity sensor
Manufacturer	Bently Nevada
Supply condition	New, original product
Technical source	Bently Nevada 330500 Velomitor Piezo-velocity Sensor Datasheet, 141632 Rev. V
Product type	Integrating piezo-velocity sensor
Mounting adaptor	M8 x 1
Sensitivity	3.94 mV/mm/s (100 mV/in/s), +/-5%
Frequency response	4.5 Hz to 5 kHz, +/-3 dB
Tighter response band	6 Hz to 2.5 kHz, +/-0.9 dB
Amplitude linearity	+/-1% to 127 mm/s peak
Maximum shock	5000 g peak
Bias voltage	-12.3 to -10.3 Vdc at 22 deg C

Engineering purpose

330500-02-05 converts housing acceleration internally into a velocity signal; mounting stiffness, polarity, current-limited power and cable loading govern the installed result.

02 Additional technical specifications

Power requirement	-24 Vdc nominal through a current-limiting monitor circuit
Case material	316L stainless steel
Connector	2-pin MIL-C-5015 hermetically sealed connector
Connector polarity	Pin A positive relative to pin B when case motion is toward connector
Recommended cable length	Up to 63 m under the stated loading assumptions
Legacy order tail	05 retained from the supplied complete identity; current approval meaning not established

Evidence boundary

Verified base-family performance and the 02 M8 x 1 mounting selection apply; the legacy 05 tail is preserved as supplied and is not decoded as a current approval option.

03 Engineering overview

330500-02-05 integrates the piezoelectric acceleration signal inside its stainless-steel body, allowing the monitoring channel to work directly in velocity units. This supports rolling-element-bearing and structural locations where absolute housing vibration is the engineering quantity of interest.

The M8 x 1 adaptor must seat on a clean, flat and rigid surface. Paint, unevenness, loose torque or unsupported cable can alter the mechanical transfer path and introduce resonances that do not represent the machine.

Published sensitivity and frequency bands assume the documented electrical loading. Long cable adds capacitance while high vibration and frequency increase current demand; evaluate the full sensor-cable-monitor loop and prove bias, polarity and operating response after replacement.

Application map

Rolling-element bearing monitoring

Measure absolute bearing-housing velocity where the approved program evaluates machinery condition in velocity units.

Motor and pump casing vibration

Use a rigid mounting point and defined measurement direction, then compare trends with the machine baseline.

Gearbox structural monitoring

Select a prepared housing location and frequency band that represent the intended structural response.

Permanent monitoring loop

Connect the two-pin sensor to a compatible current-limited monitoring input with documented polarity and loading.

04 Installation and product precautions

Confirm the complete marking

Match every field of 330500-02-05 with the installed record before removal or installation.

Protect sensing and interfaces

Keep the sensing face, connector and cable free from impact, moisture, metal chips and unsupported loading.

Preserve the mechanical datum

Record reach, thread engagement, locknut position and target relationship before disturbing the installed component.

Control the cable route

Maintain approved bend radius, separation and strain relief; do not twist or crush the coaxial path.

Restore the operating point

Use the approved stopped-machine procedure and confirm expected target travel remains in the documented working region.

Prove the complete channel

Verify the as-left electrical reading, monitor indication and operating response before return to service.

Technical notes

Installation relationship	The M8 x 1 adaptor, prepared mounting surface and sensor direction define the mechanical measurement path.
Electrical boundary	Sensitivity and frequency response require documented monitor power and acceptable cable loading.
Technical reference	Bently Nevada 330500 Velomitor Piezo-velocity Sensor Datasheet, 141632 Rev. V.

Engineering questions

How can mounting stiffness be verified for 330500-02-05?	Inspect the prepared pad for full metal contact, confirm adaptor seating and compare a controlled response with the accepted baseline. Correct a rocking or painted interface before interpreting data.
What does an abnormal bias level indicate on a channel using 330500-02-05?	Check monitor supply and current limiting, connector polarity, cable continuity and insulation first. A persistent bias outside the documented band after loop checks can indicate interface or sensor damage.
How should cable capacitance be assessed for 330500-02-05?	Use actual cable type and length with expected vibration amplitude and frequency. Confirm the monitoring input can supply the required current without clipping or high-frequency attenuation.
Why can displayed phase reverse after replacing 330500-02-05?	Reversed A/B wiring or a changed mounting direction reverses signal polarity. Compare pin assignment and sensor orientation with the installed drawing before software changes.
How should the complete marking of 330500-02-05 be recorded before removal?	Photograph the full order identity, installed position, companion components and cable route. Save the stopped-machine baseline so the replacement can be returned to the same documented configuration.
Which compatibility check is most important before installing 330500-02-05?	Confirm that every companion component belongs to the documented 330500 Velomitor piezo-velocity sensor. Connector fit alone does not establish electrical calibration or mechanical compatibility.
How should cable and connector integrity be tested for 330500-02-05?	Isolate the channel, inspect contacts for moisture, contamination and damage, verify continuity and insulation with an approved method, and support the cable so the connector carries no tensile load.

What commissioning evidence should be retained for 330500-02-05?	Retain full markings, mechanical datum, companion identities, wiring or chain-length checks, as-left measurements and the operating response accepted by the maintenance authority.

Acceptance and support

Retain the full marking, installed-chain identities, test readings and approved machine configuration. Confirm the exact offered item and included scope in the written quotation.



Discuss the exact marking and installed application with Apter Power.
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Verified related product references

Related product	330102-00-28-10-02-05
Related product	330104-00-16-10-02-00
Related product	330500-00-01
Related product	330980-70-CN

Commissioning record template

Installed asset	Machine, bearing, channel or cabinet reference
Companion identities	Probe, cable, sensor, interface or monitor markings
Mechanical datum	Mounting reference, reach, alignment or sealing condition
Electrical datum	Chain length, connector, shield, supply or input assignment
Before-work baseline	Gap, bias, vibration, continuity or channel observation
As-left result	Final measured value and functional proof
Approval basis	Applicable drawing, control requirement or site procedure
Handover	Technician, date, revision and maintenance-record location

Handover note

A replacement is complete only after the installed identity, physical interfaces, measured response and configuration record agree. Escalate any mismatch before the channel returns to protection or monitoring service.

Release checklist

Identity accepted	Complete marking agrees with the order, photographs and installed asset record.
Interfaces accepted	Mechanical fit, connector, wiring and companion components match the approved design.
Environment accepted	Temperature, contamination, vibration and route protection remain inside documented limits.
Configuration accepted	Hardware assignment, chain length or supply settings agree with the installed configuration.
Static proof accepted	Gap, bias, output voltage, channel state or continuity result is recorded as applicable.
Operating proof accepted	The returned channel response agrees with the approved machine or system baseline.