Bently Nevada 330500-01-04

Engineering Installation, Diagnostic and Acceptance Guide

Bently Nevada 330500-01-04 is a solid-state piezo-velocity sensor for absolute bearing-housing, casing or structural vibration.

01 Job scope and identity

Complete model	330500-01-04
Product type	Velomitor piezo-velocity sensor
Manufacturer	Bently Nevada
Technical source	Bently Nevada 330500 Velomitor Piezo-velocity Sensor Datasheet, 141632 Rev. V

Field decisions

1 Establish identity

Capture the full marking, installed companion components and baseline before disconnection.

2 Inspect interfaces

Verify mounting, cable, connector, armor, approval and environmental boundaries.

3 Fit the exact chain

Preserve the documented probe-cable-Proximitor or sensor-monitor relationship.

4 Prove response

Use the approved stopped-machine and operating acceptance procedure.

5 Record as left

Save markings, configuration, test values and operating observations.

Installation relationships

Installation relationship	Use the 1/2-20 unf mounting adapter on a rigid bearing-housing or casing surface; flexible brackets can attenuate or distort response.
Electrical boundary	The embedded electronics require the documented current-limited monitor input, cable loading and polarity.
Technical reference	Bently Nevada 330500 Velomitor Piezo-velocity Sensor Datasheet, 141632 Rev. V.

Pre-work evidence

Installed drawing	Record the approved cabinet, rail, slot, terminal, cable and system references that govern 330500-01-04.
Complete marking	Capture the complete order identity and every revision or approval marking on the delivered item.
Mechanical reference	Record mounting position, fasteners, connector orientation, access clearance and support points.
Electrical interfaces	Confirm supply, signal, bus, terminal and protective-conductor assignments against the installed drawing.
Configuration state	Record jumpers, switches, addresses, firmware or project settings that apply to this hardware.

02 Pre-installation readiness

Model-specific installation decisions

Exact identity

330500-01-04 and every delivered revision or approval marking must be recorded before removal.

Installed system

330500 Velomitor piezo-velocity sensor family companion components, channel assignment and approved machine reference must remain traceable.

Mechanical baseline

Record the as-found mounting datum, reach, lock position, target clearance, routing and connector support.

Electrical baseline

Record the applicable stopped-machine gap, bias, continuity or channel value together with test conditions.

As-left configuration

Document the final mechanical position, cable protection, connector condition and complete companion-component identities.

Functional release

Compare the final monitor indication and controlled operating response with the approved baseline before handover.

Installation precautions

Confirm the complete marking

Match every field of 330500-01-04 with the installed spare-parts and channel records.

Protect the sensing face

Prevent impact, metal-particle contact and contamination at the probe tip during handling.

Preserve the mechanical datum

Record thread engagement, reach, lock position, target relationship and as-found gap or bias before removal.

Control the cable route

Maintain the approved bend radius, connector protection and independent strain relief; do not twist the probe lead.

Restore the operating point

Use the approved stopped-machine procedure to restore the documented gap or bias.

Prove the matched channel

Verify as-left electrical indication and controlled machine response against the accepted baseline.

Companion and baseline records

Companion hardware	Record the connected drive, rack, motor, transducer, I/O base or control unit as applicable.
As-found baseline	Capture relevant voltages, currents, states, counts, fault history or channel response before removal.
Operating baseline	Record the controlled functional result after the complete system is returned to service.

Pre-installation release gates

Identity gate	The delivered marking is 330500-01-04 and all visible revision or approval details have been photographed.
Drawing gate	The installed asset, channel, mounting reference and companion-component assignments are identified on the approved record.
Mechanical gate	Mounting surface, thread or support points, access clearance and target relationship are suitable for the selected configuration.
Interface gate	Connector, conductor, shield, terminal and protective-conductor condition have been inspected before connection.
Route gate	Cable or lead routing preserves bend radius, strain relief, contamination protection and separation from damaging surfaces.
Baseline gate	The applicable stopped-machine reading and operating observation have been captured with units and test conditions.

03 Installation and commissioning

Controlled installation sequence

01 Isolate	Place the monitored machine and channel in the approved maintenance state; prove the required isolation.
02 Photograph	Capture 330500-01-04, the installed datum, connector, route and companion-component markings.
03 Measure	Record mechanical position and the applicable stopped-machine electrical reading before removal.
04 Compare	Check delivered identity, interfaces and evidence against the approved drawing and spare-parts record.
05 Install	Fit without twisting the lead; preserve thread engagement, target clearance, bend radius and strain relief.
06 Set point	Establish the operating gap or datum only with the approved stopped-machine procedure.
07 Prove	Compare local reading, monitor indication and controlled operating response with the accepted baseline.
08 Handover	Record as-left values, photographs, deviations, responsible technician and release approval.

Commissioning acceptance criteria

Mechanical fit	Absolute vibration from a piezoelectric element with embedded velocity integration. Confirm the installed datum and available target travel before final tightening.
Lead or interface fit	1/2-20 UNF mounting adapter; rigid surface preparation and torque govern high-frequency coupling. Inspect the mating interface and provide independent route support.
System position	The offered item uses the 1/2-20 unf mounting adapter; mounting stiffness, connector, current-limited input and machine baseline govern application.
As-found reference	Record the applicable stopped-machine reading and the exact companion-component identities before disconnection.
Static acceptance	Restore the documented gap, bias, continuity or channel value with the machine in the approved test state.
Functional acceptance	Compare local indication, monitor response and the controlled operating observation with the accepted machine baseline.

Deviation control	Withhold release when the delivered marking, mounting datum, interface, system length or response differs from the approved record.
Release evidence	Retain the complete marking, test conditions, measured results, photographs, reviewer and maintenance-record reference.

Acceptance test points

After mechanical fit	Record final mounting datum, engagement, lock position, target clearance and route support.
After interface connection	Confirm contact seating, conductor or shield assignment and continuity or bias as applicable.
Before energization	Reconcile companion identities, total chain configuration and monitor or collector channel assignment.
Initial energized state	Observe the local channel value and status without declaring acceptance from open-circuit voltage alone.
Controlled functional proof	Compare the returned indication and machine response with the approved operating baseline.
Final record	Attach photographs, measured values, deviations, approvals and the maintenance-record location.

04 Diagnostics and escalation

Where should 330500-01-04 be mounted?	Use a rigid, prepared bearing-housing, casing or structural location that transfers the vibration of interest; avoid flexible covers, brackets and uneven surfaces.
How should the mounting interface of 330500-01-04 be prepared?	Confirm the 1/2-20 unf mounting adapter, clean and flatten the surface, apply the approved installation method and keep torque within 32 to 46 kg cm.
What electrical checks apply to 330500-01-04?	Confirm the current-limited input and polarity, record the unloaded bias, inspect the 2-pin connector and keep field cable loading within the documented design.
How should the response of 330500-01-04 be accepted?	Compare the local velocity reading and monitor indication at a controlled operating state with the approved machine baseline.

Additional diagnostic decisions

What frequency range is documented for 330500-01-04?	The manufacturer gives 4.5 Hz to 5 kHz at +/-3 dB and a 6 Hz to 2.5 kHz precision band at +/-0.9 dB under stated conditions.
What output bias is expected from 330500-01-04?	Use the compatible current-limited input and compare the measured bias with the documented -12 +/-3 V DC boundary before interpreting vibration output.
When should 330500-01-04 be withheld from service?	Do not release the channel if mounting stiffness, connector condition, bias, polarity or controlled response differs from the approved record.
What as-left record should accompany 330500-01-04?	Retain the complete marking, mounting adapter, torque method, connector and cable condition, bias voltage, local velocity reading and monitor response.

Escalation triggers

Identity conflict	Stop if the complete marking, suffix, revision or approval identity differs from the approved record.
Host mismatch	Escalate if the rack, carrier, backplane, terminal unit or controller assignment is not documented for 330500-01-04.
Interface damage	Do not energize with bent contacts, damaged insulation, loose retainers, contamination or heat discoloration.
Environmental breach	Review any exposure beyond the documented temperature, vibration, humidity, contamination or enclosure boundary.
Unapproved substitution	Do not transfer ratings or compatibility from an adjacent order code without manufacturer evidence.
Configuration conflict	Stop if hardware settings, firmware, channel assignment or project configuration disagree with the installed record.
Unstable measurement	Investigate noise, drift, intermittent status or inconsistent readings before replacing another component.
Failed functional proof	Keep the asset in the approved maintenance state until the complete acceptance sequence is passed and recorded.

05 Handover and evidence package

As-left verification worksheet

Exact delivered marking	330500-01-04; photograph and record any additional label detail.
Installed asset reference	Machine, bearing, train, channel and drawing identifiers.
Mechanical as found	Reach, lock position, gap reference, cable route and connector support.

Static reading as found	Gap, bias, continuity or channel value appropriate to the installed system.
Companion identities	Extension cable, Proximitor or conditioner and monitor channel markings.
Mechanical as left	Final reach, lock position, target clearance and route protection.
Static reading as left	Final gap, bias, continuity or channel value with test conditions.
Operating proof	Monitor response and machine observation accepted by the responsible authority.

Evidence quality controls

Traceability	Each value is tied to 330500-01-04, the asset location, test state, instrument and date.
Repeatability	The same approved method and comparable operating state are used for before-and-after readings.
Resolution	Recorded precision does not exceed the capability of the instrument or source document.
Reference state	Stopped, energized, loaded and process-running observations are clearly distinguished.
Change control	Every changed setting, connection or mechanical datum has an approved reason and reviewer.
Retention	Evidence remains accessible with the maintenance record for future troubleshooting and replacement review.

Model-specific application limits

Bias acceptance	Record the current-limited input and confirm -12 +/-3 V DC output bias before interpreting vibration.
Velocity sensitivity	Compare the controlled response with 3.94 mV/mm/s (100 mV/in/s) under the stated loading.
Frequency boundary	Use 4.5 Hz to 5 kHz at +/-3 dB; the precision band is 6 Hz to 2.5 kHz at +/-0.9 dB.
Mounting proof	Record the 1/2-20 unf mounting adapter, prepared surface and 32 to 46 kg cm torque method.
Operating proof	Compare local velocity and monitor indication with the accepted machine baseline.

Lifecycle and installed-base context

Exact-model status	A separate manufacturing or support phase is not assigned to the complete 330500-01-04 order identity.
Installed-family context	Service planning must preserve the documented 330500 Velomitor piezo-velocity sensor family relationship for this installed channel.
Replacement boundary	Confirm the complete marking and every installed companion component before approving a replacement.
Supply boundary	Apter Power availability is confirmed independently from the manufacturer lifecycle phase.

Verified related product references

Related product	Bently Nevada 84661-96
Related product	Bently Nevada 330102-00-28-10-02-05
Related product	Bently Nevada 330104-00-16-10-02-00
Related product	Bently Nevada 330500-00-01

Engineering contact

Discuss the exact marking and installed application with Apter Power.
sales13@apterpower.com | +86 18030235313