Bently Nevada 330500-00-20

Engineering Installation, Diagnostic and Acceptance Guide

Bently Nevada 330500-00-20 is a solid-state piezo-velocity sensor for absolute bearing-housing, casing or structural vibration. Its selected mounting and configuration suffix must agree with the delivered marking.

01 Work package

Complete model	330500-00-20
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.

Pre-work evidence

Installed drawing	Record the drawing, machine location and channel designation that govern 330500-00-20.
Probe marking	Capture the complete order identity and any tag or revision visible on the delivered item.
Mechanical reference	Record thread or sleeve datum, insertion depth, lock position and expected target travel.
Cable identity	Confirm lead construction, connector condition, routing, strain relief and electrical-length relationship.
Companion electronics	Record the matching extension cable, Proximitor or signal conditioner and monitor channel.

Selected order-code snapshot

Measurement role	Absolute vibration from a piezoelectric element with embedded velocity integration.
Selected mounting	No mounting-thread adapter; mounting surface and torque govern high-frequency coupling.
Electrical output	3.94 mV/mm/s sensitivity with -12 +/-3 V DC output bias.

Evidence boundary

Current manufacturer data verifies the 330500 family performance and the no-adapter base selection. The delivered legacy suffix 20 is retained exactly and is not translated into a current approval code.

Initial quality controls

Traceability	Each value is tied to 330500-00-20, 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.

02 Interface and configuration map

Measurement	Absolute bearing-housing, casing or structural vibration
Sensitivity	3.94 mV/mm/s (100 mV/in/s) +/-5%
Frequency response	4.5 Hz to 5 kHz, +/-3 dB
Precision frequency band	6 Hz to 2.5 kHz, +/-0.9 dB
Velocity range	1270 mm/s (50 in/s) peak
Amplitude linearity	+/-2% to 152 mm/s (6 in/s) peak
Mounted resonant frequency	>12 kHz
Output bias voltage	-12 +/-3 V DC
Dynamic output impedance	<2400 ohm
Broadband noise floor	0.004 mm/s rms nominal
Maximum signal cable length	305 m under stated cable conditions
Operating temperature	-55 to +121 deg C
Case material	316L stainless steel
Connector	2-pin MIL-C-5015, hermetically sealed
Mounting torque	32 to 46 kg cm maximum
Sensor diameter	25.3 mm
Sensor height	63.2 mm
Typical sensor mass	142 g
Mounting adapter selection	No mounting-thread adapter
Approval/configuration marking	Legacy suffix 20 retained from delivered marking

Application checks

Radial shaft vibration

Use a documented bearing location and matched transducer chain to measure shaft motion relative to the probe mounting.

Axial position

Aim the probe at an approved conductive thrust target and keep the full expected travel inside the characterized working region.

Phase or speed reference

Use only with an approved once-per-turn target feature and a monitoring channel configured for phase or speed reference.

Installed-channel maintenance

Preserve the exact probe, cable, Proximitor, mounting geometry and machine baseline recorded for the existing channel.

Interpretation boundaries

Probe-only limit	Do not present complete-system range, scale or linearity as a standalone output of 330500-00-20.
Target influence	Material, geometry, finish and nearby conductive surfaces can change the installed response.
Length influence	Probe lead and extension cable form part of the calibrated electrical relationship.
Temperature influence	Apply component temperature limits at their actual locations and compare with process transients.
Mechanical influence	Thread engagement, rigidity, target travel and cable support affect repeatability and service life.
Acceptance rule	Use the approved machine baseline and maintenance procedure for the final as-left decision.

System verification controls

Traceability	Each value is tied to 330500-00-20, 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.

03 Installation workflow

Confirm the complete marking

Match every field of 330500-00-20 with the installed spare-parts record before removal or installation.

Protect the sensing face

Keep the probe tip, connector and cable free from impact, moisture, metal chips and unsupported loading.

Preserve the mechanical datum

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

Control the cable route

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

Restore the operating point

Use the approved stopped-machine procedure to restore gap or bias and verify expected target travel.

Prove the complete channel

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

Controlled sequence

01 Isolate	Place the monitored machine and channel in the approved maintenance state; prove the required isolation.
02 Photograph	Capture 330500-00-20, 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.

Release review

Installation relationship	Use the selected no mounting-thread adapter on a rigid bearing-housing or casing surface; flexible brackets can attenuate or distort the response.
Electrical boundary	The sensor incorporates embedded electronics and requires the documented current-limited monitor input, cable loading and polarity.
Technical reference	Bently Nevada 330500 Velomitor Piezo-velocity Sensor Datasheet, 141632 Rev. V.

Installation evidence package

Nameplate evidence	Overall and close photographs showing 330500-00-20, revision, approval and serial details where present.
Installation evidence	Views of the rack position, mechanical datum, terminal assignment, cable route and strain relief.
Configuration evidence	Export or screenshots identifying the approved hardware assignment and parameters without exposing credentials.
Baseline evidence	As-found readings with units, test conditions, machine state and the instrument used.
Inspection evidence	Connector, contact, insulation, fastener, contamination and heat-condition observations.
Functional evidence	As-left readings and the controlled input, output or channel response used for acceptance.
Change evidence	Any wiring, setting, firmware or mechanical change linked to its approved work reference.
Release evidence	Technician, reviewer, date, asset reference and the maintenance-record location for traceability.

04 Diagnostic decision table

Where should 330500-00-20 be mounted?	Use a rigid, prepared bearing-housing, casing or structural location that transfers the vibration of interest; avoid thin covers, flexible brackets and painted or uneven surfaces.
How should the mounting interface of 330500-00-20 be prepared?	Confirm the selected no mounting-thread adapter, clean and flatten the mounting surface, apply the approved installation method, and keep torque within 32 to 46 kg cm.
What electrical checks apply to 330500-00-20?	Confirm the current-limited input and polarity, record the unloaded bias, inspect the 2-pin MIL-C-5015 connector, and keep field cable loading within the documented channel design.
How should the response of 330500-00-20 be accepted?	Compare the local velocity reading and monitor indication at a controlled operating state with the approved machine baseline; investigate resonance, loose mounting or cable motion before release.
What evidence should be captured before removing 330500-00-20?	Photograph the complete 330500-00-20 marking, installed datum, connector, cable route and companion electronics. Record the stopped-machine baseline for the Velomitor piezo-velocity sensor.
How should connector integrity be checked on 330500-00-20?	Isolate the channel, inspect the coaxial contacts for moisture and damage, verify continuity only with an approved method, and provide strain relief so the connector carries no cable load.
What commissioning record is required for 330500-00-20?	Retain the exact markings, mechanical datum, companion-component identities, as-left gap or bias, monitor indication and the accepted operating response.
When should 330500-00-20 be withheld from service?	Do not release the channel if the complete identity, mechanical fit, cable construction, connector, approval marking or measured response differs from the approved installed record.

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 330500-00-20.
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.

Evidence quality controls

Traceability	Each value is tied to 330500-00-20, 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.

05 Acceptance, handover and support

Release the channel only after the exact marking, installed-chain identities, mechanical datum, electrical baseline and controlled operating proof have all been recorded.

As-left verification worksheet

Exact delivered marking	330500-00-20; 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.
Deviation record	Any difference from drawing or baseline, disposition and approval reference.
Release signatures	Technician, reviewer, operations owner and date.

Lifecycle status

Exact order identity	330500-00-20 is a No mounting-thread adapter Velomitor configuration; the complete suffix must remain in the spare-parts and installed-asset record.
Installed-base support	Retain the mounting adapter, approval or legacy configuration marking, connector, monitor input and machine baseline used by the existing velocity channel.
Replacement boundary	A 330500 variant with another adapter or approval/configuration suffix requires a fresh mechanical, electrical and documentation review.

Available unit details

Offered sensor	One 330500-00-20, configured as a No mounting-thread adapter Velomitor configuration.
Selected interface	No mounting-thread adapter; 2-pin hermetically sealed MIL-C-5015 connector.
Separate components	Signal cable, mounting stud or adapter not integral to the selected code, monitor and field wiring are separate unless itemized in the quotation.

Model-specific application limits

Sensitivity	3.94 mV/mm/s (100 mV/in/s) +/-5%
Frequency response	4.5 Hz to 5 kHz, +/-3 dB
Velocity range	1270 mm/s peak
Output bias	-12 +/-3 V DC
Operating temperature	-55 to +121 deg C

Verified related product references

Related product	Bently Nevada 330930-040-03-00
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

Engineering contact

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