Bently Nevada 3300/48-04-02-01-00

Installation & Commissioning Guide

01 Establish the measurement and replacement scope

Retain the complete option identity

Order-code configuration: 0-50 mm, 2 in. DC LVDT; 10 mV/mil, epoxy sealed, agency option 00. Field-programmable settings must match the installed rack and LVDTs. Compare the front label and rear signal-input assembly with the installed position before treating the offered monitor as the same configuration.

Identify the two measurement locations

The two DC LVDTs measure casing displacement relative to the machine foundation. Record the monitored supports, the fixed reference and the direction of movement. The casing measurement must remain distinct from a rotor-to-casing differential-expansion measurement.

Preserve the existing configuration

Record the full-scale range, input sensitivity, recorder format and mode, alarm setpoints, delays, reset behavior, relay state and upscale direction. Keep the receiving-system scaling and contact logic with the rack record so both ends of each signal can be checked.

Prepare controlled access

Apply the site machinery-monitoring maintenance and isolation procedure before accessing the rack or transducer wiring. Plan the effect of removing a measurement channel or disturbing relay circuits. Handle circuit boards with ESD precautions and use the applicable rack instructions.

Field reference

Monitor function	Two-channel casing expansion
Full-scale range	0-50 mm
Transducer input	2 in. DC LVDT; 10 mV/mil
Alarm relay option	Epoxy sealed
Agency approval option	00 - Not required

02 Connect the LVDTs and recorder circuits

Match signal conversion

2 in. DC LVDT; 10 mV/mil is the selected input configuration. The two transducers must be matched to the monitor setting and the machine mounting arrangement. A display-unit change does not establish the correct input scale factor by itself.

Keep terminal functions separate

The DC LVDT system drawing distinguishes signal, common and the transducer power connections. The monitor supplies -24 Vdc with individual channel current limiting. Use the actual transducer and rear-module terminal drawing; never transfer wiring from a connector with only a similar appearance.

Select recorder mode and format

The recorder circuit provides either two direct-channel measurements or one differential measurement. Choose 4-20 mA, 1-5 Vdc or 0 to -10 Vdc, and set the receiver full-scale to match the monitor. Confirm sign and movement direction at the receiving system.

Check loading and diagnostic access

A 4-20 mA output supports 0-600 ohms with 0 to +12 Vdc compliance. Voltage outputs have 100-ohm impedance and require at least 10 kilohms. Front coaxial buffered outputs and rear buffer terminals allow the transducer signals to be checked without confusing them with scaled recorder signals.

Field reference

DC input arrangement	Two matching LVDTs
Current recorder	4-20 mA; 0-600 ohms
Voltage recorder	1-5 Vdc or 0 to -10 Vdc; load at least 10 kilohms
Buffered signal	100-ohm impedance; short-circuit protected

Source	Setting	Result
Match both transducers and the target	Preserve scale and trigger or input choices	Prove the indicated and recorded measurement

03 Configure differential alarms and relay behavior

Set the intended measurement mode

Direct mode allows the two individual casing-expansion values to be viewed. Alert and Danger comparisons are available only in Differential mode. Verify the displayed measurement before adjusting or testing alarm levels.

Adjust levels with their resolution in mind

Both alarm levels are digitally adjustable over 0-100% of full-scale. Setting resolution is within ±1.6% of full-scale; repeatability after setting is within ±0.4% of full-scale. Apply the machine monitoring plan and retain the final setpoints in the service record.

Prove delay and reset behavior

The selectable alarm delays are 0.1, 1, 3 or 6 seconds. Alert and Danger can each be configured for latching or nonlatching reset. Verify the chosen delay and the required reset action rather than relying on an assumed factory configuration.

Verify the actual relay path

Epoxy sealed is the ordered relay option. Confirm the rear-module identity, contact terminals and any common relay bus programming. Normally energized and normally de-energized modes are configuration choices; prove their actual response through the downstream annunciator circuit.

Field reference

Alarm basis	Differential measurement only
Setting span	0-100% of full-scale
Delay choices	0.1 / 1 / 3 / 6 seconds
Configuration record	Alert and Danger reset and relay states

Decision	Output	Verification
Use the configured measurement and setpoint	Check relay mode and the receiving circuit	Measure delay and prove reset behavior

04 Prove both channels and resolve diagnostic indications

Check normal movement and difference

Apply the approved calibration or functional-check method to each LVDT channel. Confirm the expected direct readings, upscale direction and differential value, then compare the recorder signal at the receiving system. Do not substitute a generic test value for the machine-specific acceptance plan.

Separate display and conditioning accuracy

At +25°C, conditioning error is typically within ±0.33% of full-scale and no more than ±1%. The LCD resolution is within ±1.6% of full-scale, while recorder error is additional and depends on the selected format. Use the relevant limit for each test point.

Interpret OK and error indications

A steady green OK indication represents the healthy channel condition. A 1 Hz flash records a previous transducer not-OK event that has recovered; 5 Hz indicates stored errors. The LCD also presents error codes and adjustment status. Record the indication before reset or further troubleshooting.

Complete the release check

The monitor runs power-up, cyclic and user-invoked self-tests. A continuing error stops monitoring until corrected. After resolving faults, prove the intended alarms and recorder behavior, remove temporary test conditions and restore the approved rack configuration before release.

Field reference

Channel test	Direct reading and movement direction
Differential test	Expected difference and alarm decisions
Output test	Recorder scaling and contact response
Final state	No unresolved active error or unintended bypass

Observe	Resolve	Release
Record signal and diagnostic indications	Correct the fault and repeat the affected test	Restore normal settings and retain results

05 Retain the installed-system record

Build a reproducible handover

Retain 3300/48-04-02-01-00 with the rear assembly marking, rack position, LVDT references, movement direction, recorder scaling and final alarm configuration. Include the measured test results and the approved normal/bypass states so later maintenance can reproduce the acceptance checks.

Plan for an obsolete platform

The 3300 platform entered obsolete Phase 5 in March 2014, and manufacturer repair and replacement support ended in 2017. Review future migration with Bently Nevada using the complete installed system; newer platforms require a system-level engineering review.

Explore other Bently Nevada references

Portfolio navigation only; no compatibility or substitution is implied.

Bently Nevada 3300/05-24-00-00	View product
Bently Nevada 3300/05-23-00-00	View product
Bently Nevada 3300/05-22-01-00	View product

Discuss the complete offered reference

Bently Nevada 3300/48-04-02-01-00

New, original product

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Technical reference

Bently Nevada 3300/48 Specifications and Ordering Information, 141510-01 Rev. F; Case Expansion Monitor Operation, 84417-01 Rev. NC

Apter Power engineering guide. Use the complete manufacturer and machine instructions for installation and release.