Bently Nevada 3300/55

Official Technical Reference Excerpt

The monitor conditions two velocity inputs and applies field-selectable filtering and alarm logic for machinery-housing vibration protection.

PRODUCT ROLE

Characteristic 1

Accepts one or two velocity-transducer signals.

Characteristic 2

Supports multiple Bently Nevada seismic transducer families.

Characteristic 3

Uses selectable filtering for the intended machine response band.

Characteristic 4

Provides continuous channel status and vibration alarms.

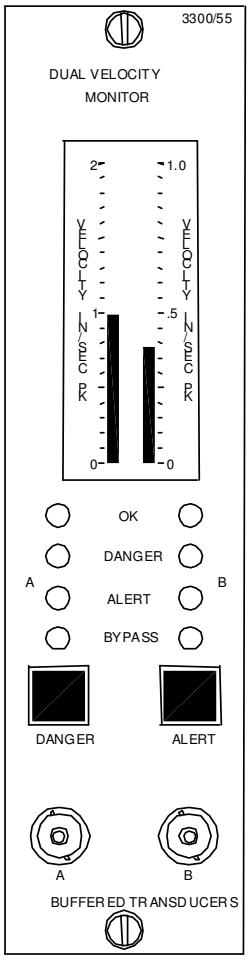
MANUFACTURER DOCUMENT

Manufacturer document	Bently Nevada 3300/55 Dual Velocity Monitor Datasheet 141516-01
Application scope	The values below apply to the identified product and its documented system relationship.
Selection rule	Use the complete ordering string and confirm the installed interfaces before selection.

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3300/55 Dual Velocity Monitor

Bently Nevada™ Asset Condition Monitoring



Description

The 3300/55 Dual Velocity Monitor provides two channels of continuous on-line machinery vibration monitoring. The monitor accepts inputs from one or two Velomitor® transducers, High Temperature Velomitor Systems (HTVS), or Velocity Seismoprobe® transducers without the need for interface modules.

Flexibility is designed into the Dual Velocity Monitor. Many user-selectable options, such as high- and low-pass filter corner frequency options, can be easily (re)programmed in the field with plug-in jumpers.

⚠ Caution

If housing measurements are being made for overall protection of the machine, thought should be given to the usefulness of the measurement for each application. Most common machine malfunctions (imbalance, misalignment, etc.) originate at the rotor and cause an increase (or at least a change) in rotor vibration. In order for any housing measurement alone to be effective for overall machine protection, a significant amount of rotor vibration must be faithfully transmitted to the bearing housing or machine casing, or more specifically, to the mounting location of the transducer.

In addition, care should be exercised in the physical installation of the transducer. Improper installation can result in a decrease of the transducer amplitude and frequency response and/or the generation of signals that do not represent actual machine vibration.

Upon request, we can provide engineering services to determine the appropriateness of housing measurements for the machine in question and/or to provide installation assistance.

Specifications

Inputs

Signals:

Accepts signals from one or two Bently Nevada Velomitor transducers or 2-wire velocity Seismoprobe® transducers. (See Ordering Information for specifics).

Sensitivity:

500 mV/in/s, 145 mV/in/s, or

100 mV/in/s, jumper-programmable.

Power:

Nominal consumption of 1.5 Watts.

Signal Conditioning

Frequency Response:

(Without Filters).

Velocity Seismoprobe:

3 - 10,000 Hz (180-600,000 cpm);

-3dB nominal.

HTVS and Velomitor:

3 - 3,000 Hz (180-180,000 cpm);

-3dB nominal.

Note: Velomitor and HTVS options have built-in low pass filter to limit gain at high frequencies.

Filter Corner Frequencies:

High-pass can be selected from one of 450 frequencies, from 3 - 400 Hz (180 - 24,000 cpm). Low-pass can be selected from one of 500 frequencies, from 24 - 3000 Hz (1440 - 180,000 cpm). Corner frequencies are nominally -3dB down from the passband center frequency.

Filter Quality:

High-pass 2-pole (40 dB per decade, 12 dB per octave). Low-pass 2-pole (40 dB per decade, 12 dB per octave).

Integration:

Integration can be user-selected per channel except when the rms options are used (hence, not available with the 04 or 08 channel input options). The buffered displacement output signal has a scale factor of 200 mV/mil (8 V/mm).

Accuracy:

Specified at ambient temperature of +25°C (+77°F).

Within ±0.33% of full-scale typical,

±1% maximum, exclusive of rms circuitry, integration and filters.

±2% maximum, 2X Trip Multiply

±3% maximum, 3X Trip Multiply

Outputs

Recorder:

User-programmable for +4 mA to +20 mA, 0 Vdc to -10 Vdc, or

+1 Vdc to +5 Vdc. Voltage or current outputs are proportional to programmed monitor full-scale. Individual recorder outputs are provided for each channel. Monitor operation is unaffected by short circuits on recorder outputs.

Recorder accuracy (in addition to signal conditioning accuracy):

All specified at +25°C (+77° F).

+4 to +20 mA: ±0.7% of signal, ±0.09 mA offset.

Relative Humidity:

To 95%, noncondensing.

CE Mark Directives

EMC Directive

Certificate of Conformity: 158710

Low Voltage Directive

Certificate of Conformity: 135300

Hazardous Area Approvals

CSA/NRTL/C

Class I, Div 2

Groups A, B, C, D

T4 @ Ta = +65 °C

Certification Number

150368 – 1002151 (LR 26744)

ATEX

 II 3 G

EEx nC[L] IIC

T4 @ Ta = -20°C to +60°C

When installed per document number 132577-01.

Certification Number

BN26744C-55A

Physical

Rack Space Requirements:

One rack position (any position except 1 and 2, which are reserved for the Power Supply and System Monitor, respectively).

Weight:

1 kg (2.2 lbs.).

Ordering Information

For spares, order the complete catalog number as described below. This includes a front panel assembly, monitor PWAs with sheet metal, and appropriate relay module. This unit is optioned, tested and ready to install in your system. Spare relay modules can be ordered separately.

Dual Velocity Monitor

3300/55-AXX-BXX-CXX-DXX-EXX-FXX-GXX-HXX

Factory-set Option Descriptions

A: Channel Input Option

- **0 1** Dual Velocity Inputs: Channels A & B indicate in peak velocity.
- **0 2** Dual Velocity Inputs: Channel A indicates in peak velocity units, Channel B indicates in peak-to-peak displacement.
- **0 3** Dual Velocity Inputs: Channels A & B indicate in peak-to-peak displacement.
- **0 4** Dual Velocity Inputs: Channels A & B indicate in rms velocity.
- **0 5** Single Velocity Input: Channels A & B indicate in peak velocity.
- **0 6** Single Velocity Input: Channel A indicates in peak velocity units, Channel B indicates in peak-to-peak displacement.
- **0 7** Single Velocity Input: Channels A & B indicate in peak-to-peak displacement.
- **0 8** Single Velocity Input: Channels A & B indicate in rms velocity.

B: Transducer Type Option

- **0 1** 9200 or 74712, 500 mV/in/s (2-wire, 10 kΩ input impedance).
- **0 2** 47633 or 86205, 500 mV/in/s (2-wire, 24.9 kΩ input impedance)
- **0 3** 145 mV/in/s (CEC 4-126)
- **0 4** Velomitor 100 mV/in/s
- **0 5** HTVS 145 mV/in/s

Note: The transducer voltage must be selected for 24 Vdc in the power supply when the Velomitor or HTVS option is used.

C: Channel A Full-scale Range Option

- **0 1** 0 - 0.5 in/s pk
- **0 2** 0 - 1 in/s pk

Related models and selection control

Use these live ApterPower pages for comparison. Verify each complete ordering string independently.

RELATED PRODUCT REFERENCES

Bently Nevada 330505-02-02-02	Technical-reference companion. Review the complete ordering string before selection.
Bently Nevada 3300/03	Technical-reference companion. Compare the required interface and system position.
Bently Nevada 3500/94M 184826-01	Technical-reference companion. Confirm the execution independently for the intended task.

EXACT-SELECTION CONTROLS

Product identity	Confirm the complete 3300/55 marking.
System interface	3300 machinery protection
Technical boundary	Record the installed 3300/55 interfaces and configuration before removal, then prove the monitored value, status and alarm path after installation.
Source	Bently Nevada 3300/55 Dual Velocity Monitor Datasheet 141516-01

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