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Find the GE / Bently Nevada 76683-02 35mm at our website: Click HERE

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.



imagination at work

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	Filter Quality:	
ns		High-pass 2-pole (40 dB per decade, 12 dB per octave). Low- pass 2-pole (40 dB per decade, 12 dB per octave).
Accepts signals from one or two Bently Nevada Velomitor transducers or 2-wire velocity Seismoprobe® transducers. (See Ordering Information for specifics). 500 mV/in/s, 145 mV/in/s, or	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
100 mV/in/s, jumper-		mV/mil (8 V/mm).
programmable.	Accuracy:	
Nominal consumption of 1.5		Specified at ambient temperature of +25°C (+77°F).
Watts.		Within ±0.33% of full-scale typical,
		±1% maximum, exclusive of rms circuitry, integration and filters.
(Without Filters).		±2% maximum, 2X Trip Multiply
		±3% maximum, 3X Trip Multiply
	Outputs	
3 - 10,000 Hz (180-600,000 cpm);	Recorder:	
-3dB nominal.		User-programmable for +4 mA to +20 mA, 0 Vdc to -10 Vdc, or
		+1 Vdc to +5 Vdc. Voltage or
3 - 3,000 Hz (180-180,000 cpm);		current outputs are proportional
-3dB nominal.		to programmed monitor full- scale Individual recorder outputs
Note: Velomitor and HTVS options have built-in low pass filter to limit gain at high frequencies.		are provided for each channel. Monitor operation is unaffected
	Desenden	outputs.
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.	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.
	 Accepts signals from one or two Bently Nevada Velomitor transducers or 2-wire velocity Seismoprobe® transducers. (See Ordering Information for specifics). 500 mV/in/s, 145 mV/in/s, or 100 mV/in/s, jumper- programmable. Nominal consumption of 1.5 Watts. ning (Without Filters). 3 - 10,000 Hz (180-600,000 cpm); -3dB nominal. 3 - 3,000 Hz (180-180,000 cpm); -3dB nominal. 3 - 3,000 Hz (180-180,000 cpm); -3dB nominal. Ind HTVS options have built-in low gain at high 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. 	Accepts signals from one or two Bently Nevada Velomitor transducers or 2-wire velocity Seismoprobe® transducers. (See Ordering Information for specifics). Integration: 500 mV/in/s, 145 mV/in/s, or 100 mV/in/s, jumper- programmable. Accuracy: Nominal consumption of 1.5 Watts. Accuracy: Nominal consumption of 1.5 Watts. Accuracy: Nominal consumption of 1.5 Watts. Outputs Recorder: 3 - 10,000 Hz (180-600,000 cpm); -3dB nominal. Outputs Recorder: 3 - 3,000 Hz (180-180,000 cpm); -3dB nominal. Recorder: 3 - 3,000 Hz (180-180,000 cpm); -3dB nominal. Recorder: Acouracy: Notifiend 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. Recorder accuracy!

	+1 to +5 Vdc: ±1.1% of signal, ±10 mV offset.	Displays Meter:	
Output Impedance (voltage	0 to -10 Vdc: ±1.1% of signal, ±15 mV offset.		Nonmultiplexing vertical bargraph type Liquid Crystal Display (LCD). Individual 63-segment LCD per channel. LCD also displays error codes and monitor ADJUST mode.
outputs):	100 Ω . Minimum load resistance is 10 k Ω .	Resolution:	Within ±1.6% of monitor full-
Voltage Compliance (current outputs):		Size:	83 mm (3.25 in), (vertical dimension).
·	0 to +12 Vdc range across load. Load resistance is 0 to 600 Ω when using +4 to +20 mA option.		LED Indicators
Buffered Transducer Outputs:	One coaxial connector per channel on front panel and one terminal connection per channel on rear panel. All are short-circuit protected. Outputs are jumper- programmable for filtered or unfiltered, velocity or displacement with peak-to-peak options.	ОК:	One green LED per channel when ON, indicates OK condition of moni-tor, transducers, and field wiring. When OFF, a NOT OK condition or a Channel Bypassed (red Bypass LED ON) is indicated. OK LED flashing at 1 Hz indicates channel has been NOT OK, but is now OK (if Timed OK/Channel Defeat is programmed). OK LED
Alarms Alarm		Bypass:	flashing at 5 Hz indicates error code(s) stored in memory.
Setpoints:	Both alarms (Alert and Danger) are digitally adjustable from 0 to 100% of full-scale and can be set within LCD resolution (±1.6%) to desired level. Once set, alarms are repeatable within ±0.39% of full-	Environmontal	Two red LEDs indicate status of Danger Bypass and Rack/Channel Bypass functions (individually per channel). LEDs flash when monitor is in Trip Multiply mode.
Relay Modules	scale.	Operating Temperature:	Linits
Location:	One alarm relay module can be	Storage	0°C to +65°C (+32°F to +150°F).
	least one relay module must be ordered with each 3300 System.	remperature:	-40°C to +85°C (-40°F to +185°F).

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

Ex 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

		01	Dual Velocity Inputs: Channels	
		02	Dual Velocity Inputs: Channel	
			A indicates in peak velocity	
			units, Channel B indicates in	
			peak-to-peak displacement.	
		03	Dual Velocity Inputs: Channels	
			A & B indicate in peak-to-peak	
		• •	displacement.	
		04	Dual Velocity Inputs: Channels	
		0.5	A & B Indicate in rms velocity.	
		05	Single velocity input: Channels	
		06	Single Velocity Input: Channel	
			A indicates in peak velocity	
			units, Channel B indicates in	
			peak-to-peak displacement.	
		07	Single Velocity Input: Channels	
			A & B indicate in peak-to-peak	
			displacement.	
		08	Single Velocity Input: Channels	
р.	Transducar Tun	Ontion	A & B indicate in rms velocity.	
D.		00000000000000000000000000000000000000	9200 or $7/1712 = 500 \text{ mV/in/s} / 2 - 100 \text{ mV/in/s} / 2 - 100$	
			wire $10 \text{ k}\Omega$ input impedance)	
		02	47633 or 86205, 500	
		mV/in/s (2-wire, 24.9 k Ω input		
		impedance)		
		03	145 mV/in/s (CEC 4-126)	
		04	Velomitor 100 mV/in/s	
		05	HTVS 145 mV/in/s	
		Note: must b power	The transducer voltage be selected for 24 Vdc in the supply when the Velomitor	

C: Channel A Full-scale Range Option

01 0 - 0.5 in/s pk **02** 0 - 1 in/s pk

or HTVS option is used.

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	03	0 - 2 in/s pk		Interr	nal Safety Barrier option is not
	0 4	0 - 5 mils pp			available with the Velomitor,
	0 5	0 - 10 mils pp			HTVS, or with Quad Relays.
	0 6	0 - 20 mils pp	G: Alarm Relay (Option	
	07	0 - 0.5 in/s rms		00	No Relays (Velocity
	0 8	0 - 1 in/s rms			Seismoprobe)
	09	0 - 2 in/s rms		01	Epoxy-sealed (Velocity
	11	0 - 10 mm/s pk			Seismoprobe)
	12	0 - 20 mm/s pk		02	Hermetically-sealed (Velocity
	13	0 - 50 mm/s pk			Seismoprobe)
	14	0 - 100 µm pp		03	Quad Relay (four relays per
	15	0 - 200 µm pp		•••	monitor Epoxy-sealed only)
	16	0 - 500 µm pp			(Velocity Seismonrobe)
	17	0 - 10 mm/s rms		04	No Relays (Velomitor)
	18	0 - 20 mm/s rms		05	Epoxy-sealed (Velomitor)
	10	0 = 50 mm/s rms		06	Hermetically-sealed
	15	0 30 1111/3 1113		00	(Velomitor)
				07	(Velomitor)
				07	No Relays (HTVS)
D:	Channel B Full-scal	e Range Option		00	Epoyu coaled (HTVS)
	01	0 - 0.5 in/s pk		10	Lermetically coaled (UTVS)
	0 2	0 - 1 in/s pk		10	Quad Polay (UTVS)
	03	0 - 2 in/s pk		11	Quuu Reluy (HTVS)
	0 4	0 - 5 mils pp		1 Z	Spare Monitor-No SIM/SIRM
	0 5	0 - 10 mils pp		Notes	S:
	06	0 - 20 mils pp		At lea	ardered with each 7700
	07	0 - 0.5 in/s rms			Custom If and common relation
	0 8	0 - 1 in/s rms			System. If one common relay
	0 9	0 - 2 in/s rms			module per system has been
	11	0 - 10 mm/s pk			ordered, all monitors of this
	12	0 - 20 mm/s pk			type must be jumper
	13	0 - 50 mm/s pk			programmed at the factory to
	14	0 - 100 µm pp			activate a relay bus. Order
	15	0 - 200 µm pp			SCK (Special Configuration Kit)
	16	0 - 500 µm pp			15755-128 for bus one or
	17	0 - 10 mm/s rms			157555-129 for bus two.
	18	0 - 20 mm/s rms		Agen	cy Approval places limitations on
	19	0 - 50 mm/s rms			the relay module. Refer to the
E:	Agency Approval Opti	on			Relay Module data sheet for
	00	Not Required			information.
	01	CSA/NRTL/C	H: Trip Multiply	Option	
	0 2	ATEX self certification		00	None
	Note	: ATEX approval requires the		01	2X
		monitor rack be installed in a		02	3X
		weatherproof housing.	Spare Relay Mo	dule Ass	semblies
F:	Intrinsic Safety Barrie	rs	Order the entire		antheoic for ATEV approved
	00	None		n in pure	entriesis for ATEX approved
	01	External (01, 02, 03 Transducer	spures/		
	-	types)	84137-01(02)		
	0 2	Internal (01, 02, 03 Transducer	0.10. 01(01)		
		types)		Seisr	nic No Relays
	03	External (04, 05 Transducer	84143-01(02)		
		types)	07170 VI(02)		
	Note	S:		Seisr	nic Dual Epoxy Relays
	Exter	nal Safety Barriers must be	84149-01/021		
		ordered separately.	0-71-7-01(02)		
		. /			

	Seismic Dual Hermetic Relays	6 seconds	
84154-01(02)		OK Mode Option	
	Seismic Quad Relays	Nonlatching	
88844-03(06)		Latching	
88844-02(05)	Seis No Relays, Int Barriers	Note: If Timed OK/Channel Defeat is enabled, C Mode must be nonlatching.	OK
	Seis Dual Epoxy Relays, Int Barriers	Alert Mode Option	
88844-01(04)		Latching	
	Seis Dual Hermetic Relays, Int Bar	Nonlatching	
130731-01(02)			
130730-01(02)	Velomitor No Relays	Danger Mode Option	
190790 01(02)	Velomitor Dual Epoxy Relays	Latching	
130733-01(02)		Nonlatching	
150755-01(02)	Velomitor Dual Hermetic Relays	Danger Bypass Option	
130732-01(02)		Disabled	
	Velomitor Quad Relays	Enabled	
130735-01(02)	HTVS No Relays	Recorder Outputs Option	
130734-01(02)		+4 to +20 mA	
	HTVS Dual Epoxy Relays	+1 to +5 Vdc	
130737-01(02)		0 to -10 Vdc	
130736-01(02)	HTVS Dual Hermetic Relays	Recorder Clamping Option	
<u></u>	HTVS Quad Relays	(+4 to +20 mA only with Timed OK/Channel Def enabled)	feat
Field-programmable Options		Not OK = 4 mA	
These options ar	e field-programmable via plug-in	Not $OK = 2 mA$	
from the factory.		Danger Relay	
First Out Option		Voting Option	
	Enabled	OR voting for relay drive	
	Disabled	AND voting for relay drive	
Alarm Time Delay Option		Note: For Quad relays, AND voting must be dor externally by wiring the contacts in series.	ne
	1 second	High-pass Filter	
	3 seconds	Option for Channel A	

None

450 corner frequencies from 3 to 400 Hz (180 to 24,000 cpm)

High-pass Filter Option for Channel B

None

450 corner frequencies from 3 to 400 Hz (180 to 24,000 cpm)

Low-pass Filter Option for Channel A

None

500 corner frequencies from 24 to 3000 Hz (1440 to 180,000 cpm)

Low-pass Filter Option for Channel B

None

500 corner frequencies from 24 to 3000 Hz (1440 to 180,000 cpm)



Caution

The Timed OK/Channel Defeat function may not prevent generation of alarms caused by Velocity Seismoprobe wiring faults under worst-case conditions. For applications where false trip protection is critical, it is recommended that two transducers be used with AND voting in the monitor. This will minimize the possibility of a single transducer and/or wiring fault from generating false monitor alarms.

02245000 Timed **OK/Channel** 9200, 74712, 86205External **Defeat Option** Barrier Enabled 02295055 Disabled HTVS or Velomitor External Barrier Notes: 02200214 1. If Timed OK/Channel Defeat is enabled, OK Surge Protector Mode must be nonlatching.

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 For applications that monitor reciprocating equipment, it is recommended that Timed OK/Channel Defeat be Disabled.

Channel A Integrator/ Filter Positioning

Integrator after filtering

Integrator before filtering

Channel B Integrator/ Filter Positioning

Integrator after filtering

Integrator before filtering

Channel A Buffered Transducer Output

Channel B Buffered

Transducer

Accessories

Output

Unfiltered

Filtered

Note: For an integrated signal, this option can be selected only when the integrator/gain stage is before the filtering stage or when no filtering is performed.

Unfiltered

Filtered

Field wiring diagrams

3300/55 Dual Velocity Monitor



Field wiring diagram for the 3300/55 Dual Velocity Monitor

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