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Find the *GE / Bently Nevada 16699-11-02-02* at our website: *Click HERE*

Transducer

Velocity System

The Velocity Transducer System measures the machine case or structural vibration velocity.

The system is composed of a velocity Seismoprobe, an interconnecting cable and, in some cases, a velocity-to-displacement converter. The Seismoprobe operates on the inertial mass, moving case principle, inducing a voltage that is proportional to the velocity of vibration. The voltage is transmitted to the V/D converter and converted to an electrical signal that represents the displacement of the machine case.

The velocity Seismoprobe is offered in three basic versions: 16699 Standard; 24646 High Temperature; 26233 Radiation Resistant. Each can be supplied with one of four mounting base options and one of three connector options.

Three factors should be considered when ordering: the minimum frequency of interest; the mounting base; and the connector.

Mounting orientation must be specifically defined for the lower operating frequency versions.

The mounting base options include a ¼-20 tapped hole, a ¼-28 tapped hole, a rectangular mounting flange and a No-Base option. A ½-20 UNF-2A stud is included in the No-Base option.

The interconnecting cables have various connections and arrangements for attaching to the velocity Seismoprobe and to the V/D converter. These cables are provided in cut-to-desired lengths. Protective armor is optional.

SPECIFICATIONS

TRANSDUCER

ELECTRICAL:

Frequency response. From the −3 dB lower limits to 60,000 rpm. Choose lower limit when ordering.

Sensitivity. 500 mV/in/sec ±5% at 6000 cpm (10 kHz) when properly terminated and oriented to the center of its angular range of operation

Radiation tolerance (26233 Velocity Transducer Only):
Tested to 3.4 x 10^7 rads (air) total integrated dosage of gamma radiation without degradation

ENVIRONMENTAL:

Rated performance. 16699 & 26233: −29°C to +121°C (−20°F to +250°F). **24646:** −20°C to +204°C (−68°F to +400°F)
Dust and moisture resistant

DIMENSIONS:

Weight. 16699 & 24646. 17 oz (0.48 kg)
26233. 23 oz (0.65 kg)

VELOCITY-TO-DISPLACEMENT CONVERTER

ELECTRICAL:

Power requirements. −16 to −26 Vdc; −24 Vdc nominal; 20 mA maximum

Output sensitivity (with a 500 mV/in/sec input).
14388-02. 100 mV/mil ±5%
23269-01. 100 mV/mil ±5%
14386-03. 200 mV/mil ±5%

Frequency range. Minimum operating rpm to 60,000 rpm

Interchangeability. System error due to interchanging velocity-to-displacement converters of ±6% maximum

Output impedance. 50 ohms

Output bias.
14386-01. −7.1V ±8%
14366-03. −7.1V ±8%
23269-02. −8.1V ±10%

Internal protection. A clamping diode protects the unit from over voltage. The unit is also diode protected from reverse voltages. The output is current limited to 30 mA

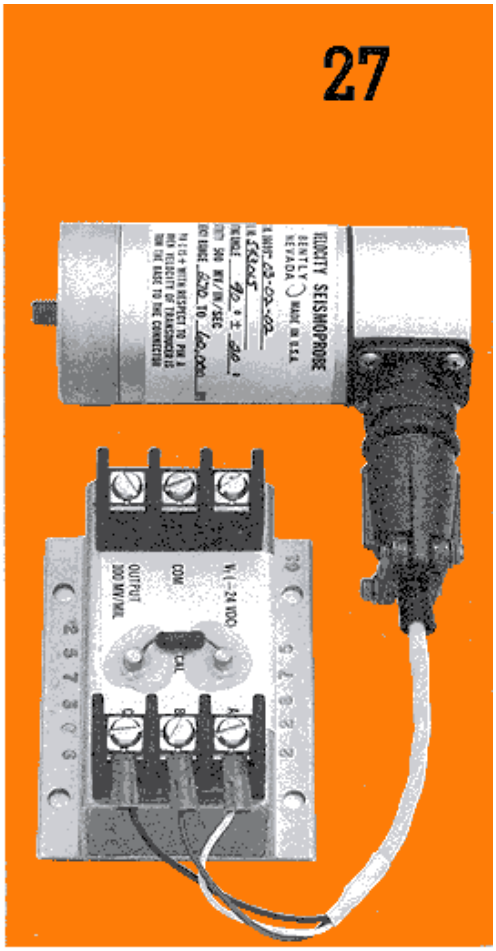
Data sheet number. L0033-00

ORDERING INFORMATION

14386—□□

‡	SCALE FACTOR
01	100 mV/mil ±5%
03	200 mV/mil ±5%

‡ Denotes option code.



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

In addition, care should be exercised in the physical installation of the velocity transducer on the bearing housing or machine casing. Improper installation may result in a decrease of the transducer amplitude and frequency response and/or the generation of false signals which do not represent actual vibration. Refer to the appropriate Instruction Manuals and Applications Notes.

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ORDERING INFORMATION

Standard
16699

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‡	MINIMUM OPERATING RPM	RECOMMENDED ANGULAR RANGE OF OPERATION ⚠	‡	MOUNTING BASE	‡	CONNECTOR
01	270	0° ±2.5°	01	Circular ¼-20 tap	01	Top mount
02	270	45° ±2.5°	02	Circular ¼-28 tap	02	Side mount
03	270	90° ±2.5°	03	Rectangular flange	03	Terminal block Top mount
10	600	0° ±100°	05	No base ½-20 UNF mounting		
11⚠	600	90° ±10°				
20	900	0° ±180°				

High temperature
24646

□□ — □□ — □□

‡	MINIMUM OPERATING RPM		RECOMMENDED ANGULAR RANGE OF OPERATION ⚠	‡	MOUNTING BASE	‡	CONNECTOR
	at 68°F (20°C)	at 400°F (204°C)					
01	270	325	0° ±2.5°	01	Circular ¼-20 tap	01	Top mount
02	270	325	45° ±2.5°	02	Circular ¼-28 tap	02	Side mount
03	270	325	90° ±2.5°	03	Rectangular flange	03	Terminal block Top mount
04	270	325	135° ±2.5°	04	Circular base with three 8-32 studs		
05	270	325	180° ±2.5°	05	No base ½-20 UNF mounting		
06	600	720	0° ±100°				
07	900	1090	0° ±180°				

Radiation resistant
26233

□□ — □□ — □□

‡	MINIMUM OPERATING RPM	RECOMMENDED ANGULAR RANGE OF OPERATION ⚠	‡	MOUNTING BASE	‡	CONNECTOR
01	270	0° ±2.5°	01	Circular ¼-20 tap	01	Top mount
02	270	45° ±2.5°	02	Circular ¼-28 tap	02	Side mount
03	270	90° ±2.5°	03	Rectangular flange	03	Terminal block Top mount
04	270	135° ±2.5°	05	No base ½-20 UNF mounting		
05	270	180° ±2.5°				
06	600	0° ±100°				
07	900	0° ±180°				

‡ Denotes option code.

⚠ Mounting tolerance can be up to ±20% with some degradation in sensitivity and phase angle accuracy.

⚠ Option -11 is the same as -10 except that -11 is calibrated at 90° which makes it more suitable for permanent monitoring. Option -10 (calibrated at 0°) is generally used for portable monitoring applications.

Cables

CATALOG NUMBER	CONSTRUCTION	USE
16925-XX	3-Wire Shielded 22 AWG Cable with 3-pin female connector at one end, terminal lugs at the other	16699 Velocity Pickup to 14386 V/D converter
16710-XX	3-Wire Shielded 22 AWG Armored Cable with 3-pin female connector one end, terminal lugs at the other	16699 Velocity Pickup to 14386 V/D converter
26361-XX	3-Wire Shielded 22 AWG with 2-pin female connector at one end, terminal lugs at the other	24646 Velocity Pickup to 14386 V/D converter (High Temperature)
26362-XX	3-Wire Shielded 22 AWG Cable with terminal lugs at each end	16699 or 24646 Velocity Pickup to 14386 V/D converter (High Temperature)
26363-XX	3-Wire Shielded 22 AWG Armored Cable with 3-pin female connector at one end, terminal lugs at the other	24646 Velocity Pickup to 14386 V/D converter (High Temperature)
26364-XX	3-Wire Shielded 22 AWG Tefzel* Cable with 3-pin female connector at one end, terminal lugs at the other	26233 Velocity Pickup to 23269 V/D converter (Radiation Resistant)
26365-XX	3-Wire Shielded 22 AWG Armored Tefzel* Cable with 3-pin female connector at one end, terminal lugs at the other	26233 Velocity Pickup to 23269 V/D converter (Radiation Resistant)
26371-XX	3-Wire Shielded 22 AWG Armored Tefzel* Cable with terminal lugs at each end	16699 or 24646 Velocity Pickup to 14386 V/D converter (High Temperature)
27466-XX	3-Wire Shielded AWG Tefzel* Cable with terminal lugs at each end	26233 Velocity Pickup to 23269 V/D converter (Radiation Resistant)
27467-XX	3-Wire Shielded 22 AWG Armored Tefzel* Cable with terminal lugs at each end	26233 Velocity Pickup to 23269 V/D converter (Radiation Resistant)
9755-XX	2-Wire Shielded 22 AWG with 2-pin female connectors at each end	Cable for connecting 3-wire to 2-wire adaptor to Bently Nevada test kits.
9571-XX	2-Wire Shielded 22 AWG Cable with 2-pin female connector at one end, terminal lugs at the other	Cable for connecting 3-wire to 2-wire adaptor to test equipment
16923-XX	3-Wire Shielded 22 AWG Cable with 3-pin female connector at each end	Cable for connecting velocity pickup to 3-wire to 2-wire adaptor
37589-XX	2-Wire Shielded 22 AWG Cable with 2-pin female connector at one end, banana plugs at the other	From 2-wire to 3-wire adaptor to binding post
37588-XX	3-Wire Shielded 22 AWG Cable with 3-pin female connector at one end, terminal lugs at the other	Terminal lug to 2-wire to 3-wire adaptor

Tefzel* is a Registered Trademark of E.I. DuPont Co.

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