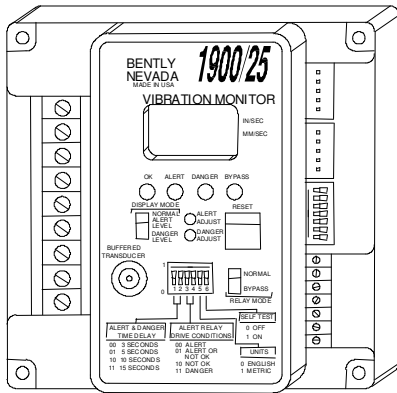


1900/25 Vibration Monitor

Bently Nevada™ Asset Condition Monitoring



Description

The 1900/25 is a single-channel, stand-alone, locally mounted vibration monitor. It provides a built-in Transducer Interface Module (TIM) for connectivity with our Trendmaster® 2000 system and allows the user to apply machinery protection capabilities to all (or selected) seismic vibration points of their Trendmaster 2000 system. It can also be used independently of the Trendmaster 2000 system as a stand-alone machinery protection device, suitable for general-purpose or some essential machinery. The 1900/25 accepts a single transducer input from compatible Trendmaster 2000 accelerometers, conditions the signal into peak velocity units, and provides local display and status indication as well as alarm relay contact outputs for connection to an external annunciator.

Note: If your application calls for a 4-20 mA interface in addition to the relays supplied with the 1900/25, consider the use of Bently Nevada's 1900/27 monitor instead (consult part number 141486-01 for details).

⚠ 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, which 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

Compatible transducers

Bently Nevada 200150 and 190520 Accelerometers.

Input Sensitivity

100 mv/g

Maximum acceleration

20 g peak

Maximum differential input voltage

4 volts peak to peak

Power

AC/HDC Power Version

AC Voltage:

85 to 264 Vac

DC Voltage:

110 to 370 Vdc

Current Draw:

60 mA. typ.

120 mA max.

Frequency:

47 Hz to 440 Hz, or DC.

Inrush:

20A typ. @ Vin=100Vac

40A typ. @ Vin=200Vac

+24 Vdc Power Version

Voltage:

18 to 36 Vdc

Current Draw:

300 mA max.

Signal Conditioning

Monitor Full-scale: (Below 614Hz)

English Units:

2.0 in/s zero-to-peak

Metric Units:

50.8 mm/s zero-to-peak

Note: Full scale is limited by maximum input above 614 Hz. The maximum input is 2 volts peak, or 20 g peak. 20 g at 614 Hz is equivalent to 2 inch per second (the full scale range of the monitor). For frequencies above 614 Hz, Full scale is equal to (1228/frequency).

Frequency

Response:

High pass corner frequency

-3 dB corner @ 8 Hz

less than 1% error due to high pass corner above 30 Hz

Low pass corner

Greater than 4 kHz

less than 1% error due to low pass corner below 4kHz

Accuracy

Liquid Crystal Display and Buffered output.

30 Hz – 4 kHz:

±3% of full scale, Maximum

8 Hz – 30 Hz

-30% , + 3% of full scale

Trendmaster Output.

30 Hz – 4 kHz:

±5% of full scale, Maximum

8 Hz – 30 Hz

-30% , + 5% of full scale

Outputs

**Buffered
Transducer
Output**

**Output
Sensitivity:**

19.7 mV/mm/s (500 mV/in/s)

**Output
Impedance:**

500 Ω

**Full-scale
Range:**

50.8 mm/s (2 in/s) zero-to-peak

**Trendmaster®
2000 Interface**

**Full-scale
Range:**

50.8 mm/s (2 in/s)

Overrange:

63.5 mm/s (2.5 in/s)

**Frequency
Response:**

10 Hz to 1 kHz

**Galvanic
Isolation:**

Optical @ 1000 Vac or 707 Vdc

Relays

Type

Single-pole, double-throw.

Contact Ratings

Switched Power:

180 watts, 1800 VA Maximum

**Maximum
Voltage and
Current**

300 Vac at 6 A
28 Vdc at 6 A

**Dielectric
Strength**

(at sea level):

Contact to Contact: 750 Vrms

Contact to Coil: 1500 Vrms

Life Expectancy

Electrical:

180,000 operations at 6 A, 120 Vac

Displays

**Liquid Crystal
Display**

Size:

50.8 mm wide x 22.8 mm high
(2.0 inches wide x 0.9 inches high)

Full-scale:

50.8 mm/s (1.999 in/s)

Refresh Rate:

0.8 s

LED Indicators

OK:

One constant ON green LED indicates OK condition of monitor, transducers, and field wiring. Constant OFF indicates NOT OK condition. OK LED flashing at 2

Hz indicates monitor has been NOT OK, but is now OK.

Alert:

One yellow LED indicates an Alert condition. Flashing at 2 Hz indicates an Alert condition has occurred and gone away. (Only occurs when the Alert relay is configured as nonlatching.)

Danger:

One of the two red LEDs indicates a Danger condition. Flashing at 2 Hz indicates a Danger condition has occurred and gone away. (Only occurs when the Danger relay is configured as nonlatching.)

BYPASS:

The other red LED indicates the monitor is in BYPASS mode.

Controls

Display Mode

Switch:

Three positions: Normal, Alert Setpoint, and Danger Setpoint. Controls what is shown on the LCD display.

Relay Mode

Switch:

Two positions; controls whether monitor is in normal or BYPASS mode.

Reset Button:

Push to reset latching relays and flashing LEDs.

Configuration

Switch

Used to set Alert and Danger Time Delay, Alert relay drive conditions, display units, and to initiate a monitor self-test.

Environmental Limits

Operating

Temperature:

-20°C to +70°C (-4°F to +158°F)

Storage

Temperature:

-30°C to +90°C (-22°F to +194°F)

Relative

Humidity:

To 95%, noncondensing

Hazardous Area Approvals

CSA/NRTL/C:

Class1, Division 2, Groups A, B, C, D T4 @ Ta=70 °C

Physical

Dimensions

Height x Width x Depth

132mm x 132 mm x 71.1 mm

(5.2 in x 5.20 in x 2.8 in)

Weight

400 g (0.85 lb).

Ordering Information

1900/25-AXX

A: Power Supply Option

01 85 - 264 Vac, 110 - 370 DC
03 +24 Vdc

Field-programmable Options

These options are either field-changeable or programmed via internal jumpers. **Bold text** indicates options as shipped from the factory.

Alarm Time

Delay Option:

3 seconds

5 seconds

10 seconds

15 seconds

Alert Relay

Configuration

Option:

Alert relay

Alert or NOT OK relay

NOT OK relay

Danger relay

The Trendmaster® 2000 host computer indicates an OK condition when the monitor is placed in BYPASS. Dynamic data is still available during a BYPASS condition.

Units Option:

English

Metric

Monitor Self-test Option:

Off

On

Relay Mode Option:

Normal

BYPASS

Normal Relay State Option:

Normally de-energized

Normally energized

Relay Reset Option:

Latching

Nonlatching

Trendmaster® 2000 Behavior Option:

The Trendmaster® 2000 host computer indicates a NOT OK condition when the monitor is placed in BYPASS. Dynamic data is not available during a BYPASS condition.

Accessories

200150 Accelerometer

200150-AXX

See Specification and Ordering Information sheet for transducer ordering information.

200152 Transducer Cable

200152 - AXX

A: Cable length option in metres.

15 15 ±0.15 metre (49.2 ±0.5 feet)

190100-01

Weatherproof enclosure for one 1900/25 Vibration Monitor.

When properly installed, the weatherproof enclosure will meet NEMA 4X watertight specifications.

Manual

190125-01

1900/25 Vibration Monitor operation and maintenance.

Computer Interface: The 1900/25 Vibration Monitoring System is ready to be used with our cost-effective, automated data collection and diagnostic system, the Trendmaster® 2000. Contact your local Sales Professional for further information.

Field wiring diagrams and dimensions

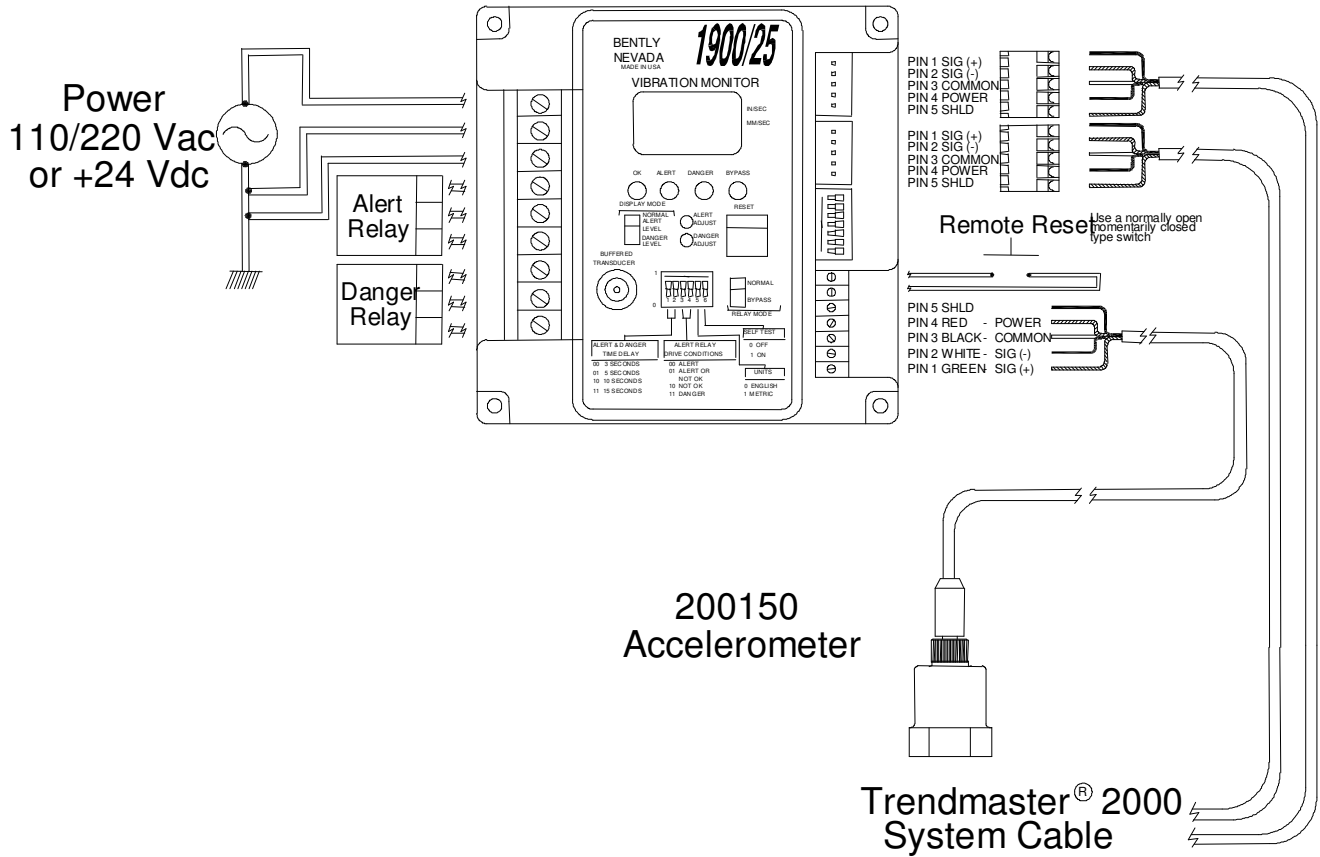


Figure 1: Typical field wiring diagram for the 1900/25 Vibration Monitoring System

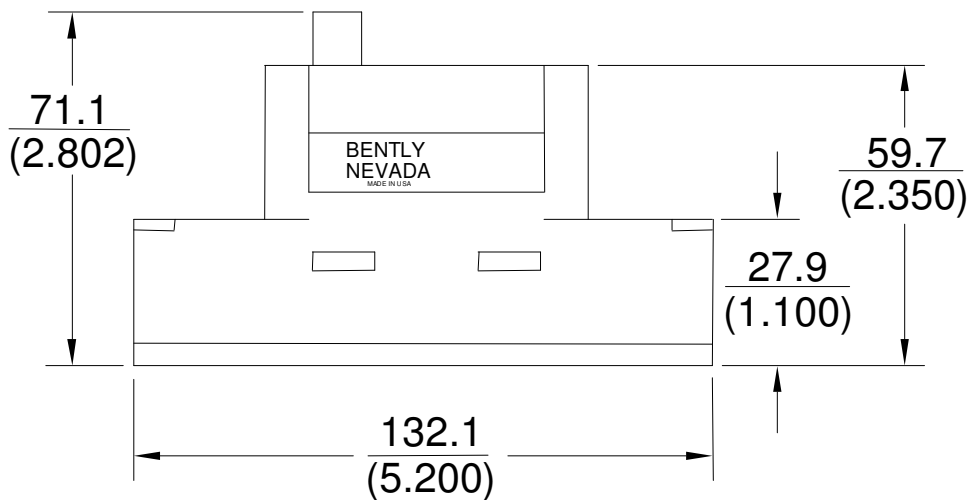
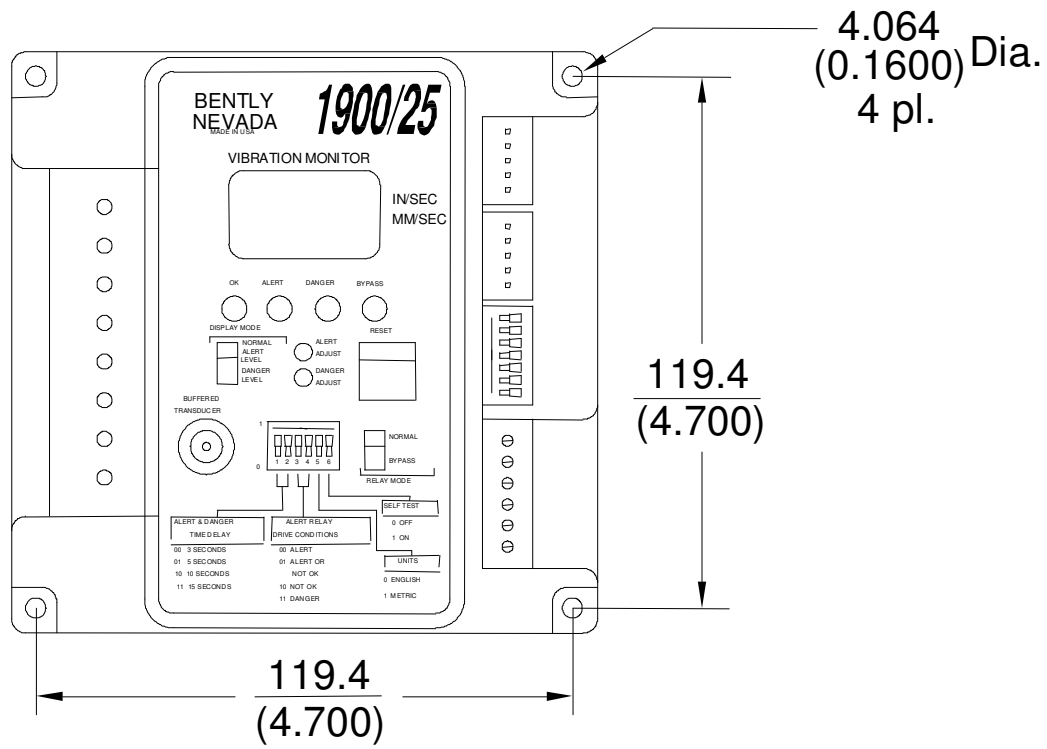


Figure 2: 1900/25 Vibration Monitor Case Dimensions Diagram
Dimensions are in millimetres (inches)

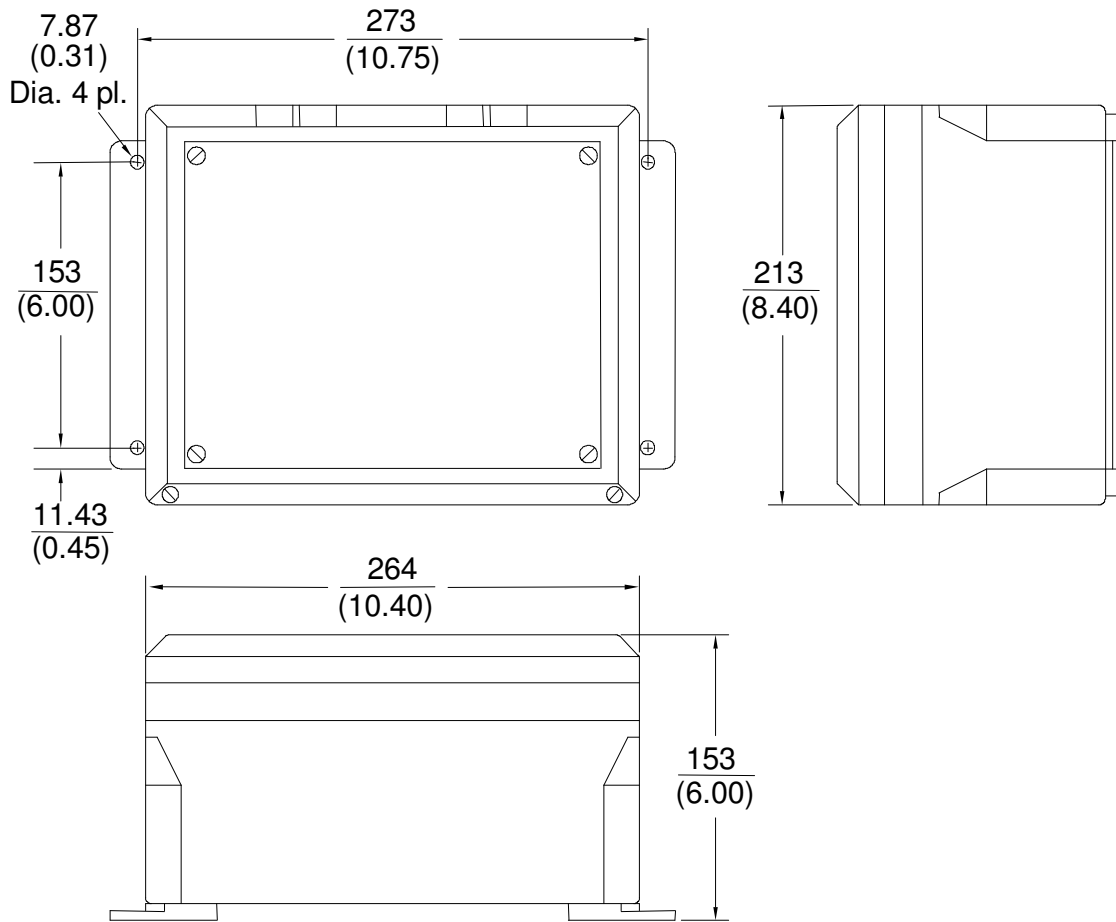


Figure 3: 1900/25 Weatherproof Enclosure Dimensions Diagram

Dimensions are in millimetres (inches)

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