

Bently Nevada 86517-xx-xx-01-02 MOD159840-01 Manual

Brand	Bently Nevada
Product Series	3300
Product Type	-

Description

BENTLY NEVADA 86517-xx-xx-01-02 MOD159840-01 Accelerometer Interface Module

ORDERING INFORMATION

Accelerometer Interface Module

86517 – AXX – BXX – CXX - DXX

A: Transducer Charge Input Sensitivity Option

01 = 50 pC/g

02 = 100 pC/g

B: Filter Corner Frequency Option

01 = 25 Hz high pass corner, 350 Hz low pass corner

02 = 100 Hz high pass corner, 560 Hz low pass corner

03 = 40 Hz high pass corner, 300 Hz

low pass corner

C: DC Signal Bias Voltage

01 = -10 Vdc, No other option available

D: Agency Approval

02 =CENELEC (SIRA)

The accelerometer interface module performs the following functions:

1. Converts a charge input from the accelerometer to a voltage acceleration signal.
2. Scales the voltage signal to 10 mV/g peak (1.02 mV/m/s² pk).
3. Buffers the acceleration signal so that it can be connected to instrumentation over long cable lengths.
4. Bandpass filters the acceleration signal using a 12th order filter with corner frequencies determined by option BB.
5. Integrates the filtered acceleration signal to a velocity signal with a sensitivity of 100 mV/in/s pk (3.94 mV/mm/s pk).
6. Buffers the velocity signal so that it can be connected to monitoring instruments over long cable lengths. The velocity signal is typically used to monitor machines.

Wiring Recommendations:

2 Accelerometer to interface: Use extension cable, Bently Nevada part numbers 45358-07 and -09, or 83387-xxx, or equivalent.

5 Interface module to monitor Power, Common, and +Velocity wiring recommendation: 18 to 22 AWG stranded, three conductor wire with insulating sheath and 100% shield coverage. 1000 feet (305 metres) maximum. 18 AWG

Belden 83336 or 22 AWG Belden 83334 can be used.

POWER

Supply Voltage: -23 Vdc to -26 Vdc

Current Draw: 22 mA maximum

INPUT

Acceleration: Differential input from a piezoelectric accelerometer with a sensitivity of 50 pC/g pk or 100 pC/g pk.

Accelerometer pole to pole capacitance plus extension cable capacitance should not exceed 8300 picofarads.

Overload: 50,000 pC peak for accelerometers with 50 pC/g pk sensitivity, and 100,000 pC peak for accelerometers with 100 pC/g pk sensitivity.

ACCELERATION OUTPUT

Sensitivity: 10 mV/g pk (1.02 mV/m/s² pk) balanced output, 50 ohm nominal output impedance.

Dynamic Range: 750 gs (7350 m/s²) without barriers typical. 500 gs (4902 m/s²) with barriers typical.

Frequency Response:

The low frequency response is controlled by the charge amplifier. The -3 dB corner is at 4.7 Hz. The high frequency response is controlled by the combination of the accelerometer and extension cable capacitance, the charge amplifier scaling stage, and the load capacitance on the acceleration output buffer. For an accelerometer capacitance of 1000 pF and a cable capacitance of 1000 pF the upper -3 dB frequency is approximately 5000 Hz.

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VELOCITY OUTPUT

Sensitivity: 100 mV/in/s pk (3.93 mV/mm/s pk), balanced output. Output impedance 100 ohms nominal.

Dynamic Range: 20 in/s pk (508 mm/s pk) 25 Hz to 1000 Hz.

Frequency Response: Dependent on filters. See filter specifications.

7.2 Accelerometer Interface Module

VELOCITY OUTPUT

Accuracy: $\pm 5.0\%$ of calculated velocity from an ideal input in the passband of the bandpass filter at 77_x001f_ F (25_x001f_ C)

FILTERS

High and low pass corner frequencies are ordered as pairs, the following pairs can be ordered:

High Pass Corner Low Pass Corner

25 Hz 350 Hz

40 Hz 300 Hz

100 Hz 560 Hz

The high and low pass filters are 6th order with -36 dB/octave rolloff and have a butterworth response. Attenuation at the corner frequency is -3 dB ± 0.5 dB.

ENVIRONMENTAL

Operating Temperature: +32° F to +158° F (0° C to 70° C)

Storage Temperature: -40° F to +185° F (-40° C to +85° C)

Humidity: 0 to 95%, noncondensing

MECHANICAL

Accelerometer Input Connector: MS-3112-8-3P

Power/Output Connector: 8 lug terminal block

Dimensions:

Height: 3.00 inches, (76.2 mm)

Width: 3.25 inches, (82.6 mm)

Length: 5.50 inches, (139.7 mm)

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