

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

BENTLY NEVADA

86517-XX-XX-01-02 Mod: 159840-1

ACCELEROMETER INTERFACE MODULE

Used with the applicable 3300 XL proximity system configuration.

REFERENCE PACKAGE

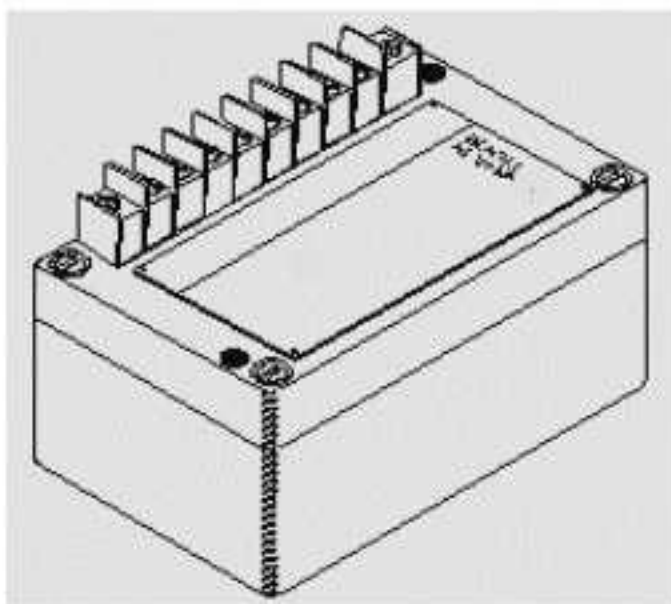
OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Bently Nevada Accelerometer Interface Module Operation Manual

Operation Manual

Bently Nevada™ Asset Condition Monitoring



Accelerometer Interface Module

1. INTRODUCTION

The 86517 Accelerometer Interface Module is a component in accelerometer-based transducer systems commonly used for vibration monitoring of aeroderivative gas generators and gas turbines. The interface module is designed for use with the Bently Nevada 3300 series 3300/95 Filter Module/Vibration Monitor and can also be used with specially modified 3300 monitors such as the 3300/15 and 3300/25.

Section 1 describes the transducer system and its individual components and explains some of the features of the system.

Section 2 gives typical receiving, inspecting, and installation instructions and field wiring and hazardous area installation instructions.

Section 3 shows how to recalibrate the charge amplifier and verify the velocity signal output. This section also contains troubleshooting information.

Section 4 provides ordering information and Section 5 describes the ordering options for the accelerometer interface module.

Specifications are provided in Section 6.

The appendix contains drawings of the interface module, extension cables, and a weatherproof housing. Also included are installation drawings for Canadian Standards Association Class 1, Division 1, and CENELEC (SIRA) Zone 1, Group IIB hazardous environments.

capacitance of the accelerometer plus the distributed cable capacitance should not exceed 8300 picofarads. Cable drawings and schematics are in the appendix.

2.3 Accelerometer

For aeroderivative gas turbines, the accelerometers are typically provided with the engine either by the manufacturer or the packager and must be qualified by the engine manufacturer. Accelerometers of this type are typically constructed with a piezoelectric crystal isolated from the accelerometer case so that the accelerometer output is differential. Accelerometers used with the 86517 interface module must have a sensitivity of 50 picocoulombes per g or 100 picocoulombes per g, and the necessary connector.

Bently Nevada offers a 50 pC/g charge coupled accelerometer (part number 45357-01) that can be used with this system. This accelerometer has a typical pole-to-pole capacitance of 1000 picofarads.

Accelerometer

If you are installing the Bently Nevada accelerometer (P/N 45357-01) then follow these directions:

Contact the turbine manufacturer or your original equipment manufacturer (OEM) for instructions on mounting the accelerometer. The correct mounting location and mounting structures, such as brackets and fasteners, are critical to the performance of the transducer system.

The accelerometer can be mounted in any orientation as long as its sensitive axis (indicated by arrow on side of accelerometer) is 90 degrees to the axis of the rotor. Four mounting holes should be drilled for 1/4 inch (6 mm) bolts at the corners of a 1.188 inch (30.18 mm) square. The mounting holes should be perpendicular to the mounting surface and the mounting surface must be flat and smooth. The mounting structure must also be rigid and have no mechanical resonances within the frequency range of interest.

Connect and safety wire the extension cable to the accelerometer.

Hazardous Area Considerations

The accelerometer interface module agency approvals are "entity" approvals. This means that each component, or entity, of the transducer system must be certified for the overall system to meet certification requirements. When specifying an agency certified system you should verify that both the interface module and accelerometer have the appropriate hazardous area certification. The Bently Nevada accelerometer, part number 45357-01, is certified for use in Class I, Divisions 1 and 2 by the Canadian Standards Association.

When installing a CENELEC approved system you must attach a system cable tag to the interface module field wire, refer to Drawing 141110 in the appendix. The tag is shipped in a plastic bag attached to the interface module. Attach the tag to the power field wire near the safety barrier using the adhesive backing. Protect the label using the piece of transparent heat shrink tubing supplied with the tag.

3.3 Field Wiring

You must supply the field wiring from the interface module to the monitor unless you specifically request that Bently Nevada Corporation provide it. The 86517 interface module is intended to be used with the 3300/95 Filter Module/Vibration Monitor but may also be connected to certain specially modified 3300 series monitors such as the 3300/15 and 3300/25. Figure 2.2 shows the wiring connections to a 3300/95 monitor without barriers and Figure 2.3 shows the wiring connections to a 3300/15 (or equivalent) without barriers. Figures 2.4 and 2.5 show connections for Division 1/Zone 1 installations when external safety barriers are used.