GE GE □□□ Series Service Manual

IS220PVIBH1AL

1. Description

SPECIFICATIONS

2. Specifications

Specification	Value
Manufacturer	General Electric
Series	Mark VI IS200
Part	Number IS220PVIBH1A
Basic	Dimensions 3.25" high x 1.65" wide x 4.78" deep
Ambient	Temperature Range -30 to 65 °C
Board	Compatibility Vibration Terminal Board (TVBA)
Channels	Thirteen for Proximity and Vibration
Common	Mode Voltage Min. 5 VDC
Frame	Rates 3.125, 6.25, 12.5, 25, 50, and 100 Hz
Functional	Acronym/Abbreviation PVIB
LED	Indicators 4
Probe	Power -24 VDC, 12 mA load per transducer
Status	LEDs Attn, Pwr, Link, TxRx
Product	Revisions Made Rev. A, Rev. B, Rev. C, Rev. D
Weight	1 lb
About	the IS220PVIBH1A
This	Mark VI Series is highly regarded as one of the final GE Mark product series to incorporate the patented Speedtronic control system technology.
The	IS220PVIBH1A is a revised version; the original was the IS220PVIBH1 Parent Vibration Monitor I/O Pack.
Hardware	Tips and Specifications
The	IS220PVIBH1A is designed as a Vibration Monitor Pack.
Its	main function is to provide an electrical interfacing function between up to

3. Product Information

SPECIFICATIONS

Part No.: IS220PVIBH1AL

Manufacturer: General Electric

Product Type: Vibration Monitor (PVIB) pack

Series: Mark VIe

IS220PVIBH1AL is a Vibration Monitor (PVIB) pack developed by GE under the Mark VIe control system. The Vibration Monitor (PVIB) pack connects one or two I/O Ethernet networks to the TVBA vibration terminal board electrically. The pack includes a processor board, an acquisition board, and a daughterboard, which are all common to all Mark VIe distributed I/O packs.

The pack reads vibration or proximity information from the following sensor types using channels 1 through 8: Proximitors, integrated output accelerometers (Channels 1-3 only), Velomitor, or seiseismic channels 9 through 12 only support proximitors, while channel 13 can input either a Keyphasor signal-type or a proximity-type signal.

Dual RJ45 Ethernet ports and 3-pin power input are used to power the pack. For frame rates slower than 100 Hz, the PVIB enables twin Ethernet networks. It supports frame rates of 3.125, 6.25, 12.5, 25, 50, and 100 Hz over an Ethernet network.

A DC-37 pin connector connects directly to the matching terminal board connector for output. Indicator LEDs are used to display visual diagnostics.

IS220PVIBH1A Compatibility

Dual RJ45 Ethernet ports and 3-pin power input are used to power the pack. For frame rates slower than 100 Hz, the PVIB enables twin Ethernet networks. It supports frame rates of 3.125, 6.25, 12.5, 25, 50, and 100 Hz over an Ethernet network. A DC-37 pin connector connects directly to the matching terminal board connector for output. Indicator LEDs are used to display visual diagnostics.

IS220PVIBH1AL Installation

Follow the procedure to install the pack

Secure the terminal board you want to use.

Connect the PVIB I/O pack to the terminal board connectors directly.

Use the threaded studs close to the Ethernet ports to mechanically secure the packs.

Depending on the system configuration, connect one or two Ethernet wires. The pack can be used with either port. When using dual connections, ENET1 should be connected to the network linked with the R controller.

Connect the pack to the power source by plugging in the connector on the side.

Configure the I/O pack as needed using the ToolboxST* application.

Check that the N28 power supply daughterboard on the TVBA is properly placed in the TVBA connector.

IS220PVIBH1A Operation

Processor

The processor board is connected to an acquisition board that is appropriate to the purpose of the I/O pack or module. The soft-start circuit ramps up the voltage available on the processor board when input power is applied. The processor reset is removed, and the local power supplies are sequenced on. The CPU runs self-test procedures before loading application code from flash memory that is particular to the I/O pack or module type.

Auto-Reconfiguration

The Auto-Reconfiguration capability enables the operator to swap I/O packs without having to manually reconfigure each pack or module.

When the Auto-Reconfiguration functionality is activated, a reconfiguration file is automatically downloaded from the controller to the I/O pack when the controller detects an I/O pack booting with a different configuration.

Hardware for Vibration Monitoring

The analog filter acquisition board (BAFA) and the analog processing daughterboard make up the PVIB application-specific hardware (KAPA).

Signal conditioning is provided by the analog filter acquisition board, which centers and amplifies signals to increase analog-to-digital resolution.

Firmware for Vibration Monitoring Applications

Position data from Proximitors, wideband vibration data from Proximitors, accelerometers with integrated outputs, Velomitors, and Seismics can all be used on channels 1 through 3. Position information from Proximitors, wideband vibration information from Proximitors, Velomitors, and Seismics can all be found on Channels 4 through 8. Only position information is broadcast on channels 9-12. Position feedback and Keyphasor feedback are both supported on Channel 13.

IS220PVIBH1AL Features

Common Mode Voltage

Minimum of 5 V dc

CMRR at 50/60 Hz

-50 dB

Size

8.26 cm high x 4.19 cm wide x 12.1 cm deep

IS220PVIBH1A Technical Specifications

Manufacturer General Electric

Series Mark VI IS200

Part Number IS220PVIBH1A

Basic Dimensions 3.25" high x 1.65" wide x 4.78" deep

Ambient Temperature Range -30 to 65 °C

Board Compatibility Vibration Terminal Board (TVBA)

Channels Thirteen for Proximity and Vibration

Common Mode Voltage Min. 5 VDC

Frame Rates 3.125, 6.25, 12.5, 25, 50, and 100 Hz

Functional Acronym/Abbreviation PVIB

LED Indicators 4

Probe Power -24 VDC, 12 mA load per transducer

Status LEDs Attn, Pwr, Link, TxRx

Product Revisions Made Rev. A, Rev. B, Rev. C, Rev. D

Weight 1 lb

About the IS220PVIBH1A

This Mark VI Series is highly regarded as one of the final GE Mark product series to incorporate the patented Speedtronic control system technology.

The IS220PVIBH1A is a revised version; the original was the IS220PVIBH1 Parent Vibration Monitor I/O Pack.

Hardware Tips and Specifications

The IS220PVIBH1A is designed as a Vibration Monitor Pack.

Its main function is to provide an electrical interfacing function between up to two I/O Ethernet networks and a vibration terminal board.

Key components include a main processor board (common to many MK VIe distributed I/O packs), a daughterboard, and an acquisition board.

Features thirteen channels for collecting and reading proximity and vibration information from various sensor types:

Velomitor

Seismic

Proximitors

Accelerometers

Sensor-Channel Specificity:

Accelerometers are used only with channels one, two, and three.

Channels nine, ten, eleven, and twelve are exclusively for supporting proximitors.

The thirteenth channel can input a proximity-type or Keyphasor signal type.

The thirteen differential inputs include a DAC (digital-to-analog converter) for bias adjustment, optimizing the A/D (analog-to-digital) input range.

Module Functionality

The pack monitors the status and operation of selected trip boards through comprehensive feedback signals.

Supports TMR (Triple Modular Redundancy) and simplex backup protection.

Built with a high-speed processor and two fully independent 10/100 Ethernet ports.

Includes a hardware reset circuit and a watchdog timer.

Internal sensor monitors temperature.

The processor application code can contain logic for operation from single or dual Ethernet inputs.

When operated from two Ethernet inputs, network paths are continuously active.

Failure of one network will not disturb I/O pack operation but will be indicated via the operating network connection.

The functional product number IS220PVIBH1A itself identifies hardware specifications:

IS220 series tag: Indicates modular Mark VI Series assembly and domestic original manufacture.

PVIB: Functional acronym.

H1: Specifies a particular product grouping/revision.

A: Denotes its single A-rated functional product revision.