GE GE □□□ Series Service Manual

IS200TVIBH2BBB

1. Description

SPECIFICATIONS

3. Product Information

SPECIFICATIONS

Part No.: IS200TVIBH2BBB

Manufacturer: General Electric

Country of Manufacture: United States of America (USA)

Size: 23.8 cm high x 8.6 cm wide

Temperature: -30 to +65 oC

Product Type: Vibration Terminal Board

Availability: In Stock

Series: Mark VI

Functional Description

IS200TVIBH2BBB is a Vibration Terminal Board developed by GE. It is a part of Mark VI control system. Through its robust operational framework and support for various probe types, the TVIB board plays a vital role in the Mark VI system's vibration monitoring and management capabilities. By providing reliable power supply, efficient signal processing, and alarm/trip logic generation, the TVIB contributes to the overall reliability and performance of industrial machinery, ultimately enhancing operational efficiency and minimizing downtime.

Probes and Terminal Boards

Up to 14 Bently Nevada probes are directly connected to the TVIB (Turbine Vibration Input Board) terminal board.

Among these probes, two can be cabled to the VVIB (Vibration Input Vector Board) for further processing. The VVIB board digitizes displacement and velocity signals, which are then transmitted over the VME bus to the controller for analysis and control.

Compatible Vibration Probe Types

Proximity: Measures the distance between the probe and the monitored surface.

Velocity: Measures the rate of change of displacement with respect to time.

Acceleration: Measures the rate of change of velocity with respect to time.

Seismic: Specially designed for monitoring ground vibration and seismic activity.

Phase: Provides information about the phase relationship between different vibration signals.

Characteristics

Facilitate the connection of Bently Nevada vibration monitoring equipment, additional functionality with BNC connectors, allowing portable vibration data gathering equipment to be plugged in for predictive maintenance purposes.

Feature connectors for permanent cabling of Bently Nevada vibration monitoring equipment. This setup enables continuous monitoring and analysis of turbine vibration, essential for detecting potential issues and ensuring optimal machinery performance. Power Supply: Power for the vibration probes is provided by the VVIB (Vibration Input Vector Board), which operates in either Simplex or TMR (Triple Modular Redundancy) mode. This ensures reliable and continuous power delivery to the probes, regardless of the system's redundancy configuration.

Signal Processing: The probe signals are routed back to the VVIB, where they undergo analog-to-digital conversion (A/D). This digital conversion process ensures accurate representation of vibration data, which is then transmitted over the VME (Versa Module Eurocard) bus to the controller for analysis and further action.

Alarm and Trip Logic: Within the controller, various alarms and trip logic mechanisms are generated based on the analyzed vibration data. These include alarms for vibration levels, eccentricity, and axial position deviations. The trip logic ensures timely intervention in case of abnormal vibration patterns, helping prevent potential machinery failures.

Power Source and Redundancy: For Proximitor power, a -28 V DC source is supplied to the TVIB terminal board from the VME board. In TMR systems, a diode high-select circuit is employed to select the highest -28 V DC bus for redundancy purposes. Additionally, regulators on the terminal board provide individual excitation sources ranging from -23 to -26 V DC, with built-in short circuit protection.

Sampling and Processing: Probe inputs are sampled at high speed over discrete time periods by the VVIB board. This rapid sampling rate ensures real-time monitoring of vibration levels with high accuracy and precision, enabling early detection of any anomalies or deviations.

About the IS200TVIBH2BBB

The IS200TVIBH2BBB was manufactured and created by General Electric as part of the company’s Speedtronic Mark VI turbine control line. Speedtronic systems are used to control functions and operations of industrial steam and gas turbine systems from large to small. The MKVI is designed to easily integrate, offering both control and protection features.

The IS200TVIBH2BBB functions as a Vibration Termination board. It is built with multiple integrated circuits mounted to its surface to control and contain data. The board also includes typical components like resistors and capacitors. Additionally, it has fourteen plug connectors located on one side of the board.

The IS200TVIBH2BBB has two large terminal blocks that take up one long board edge. These terminal blocks have screw connections placed in two lines. Each individual screw connection is numbered. This will allow users to better maintain and keep track of all board connections.

Other board components on the IS200TVIBH2BBB include female d-shell connectors, inductors, and jumper switches. The jumpers are placed in a single line near the center of the board. They are placed in pairs. Jumpers can be changed or reset to control how circuits in the board are routed. Please refer to original GE documentation for more information.

The IS200TVIBH2BBB typically works in conjunction with a VVIB to control vibration. There are rpm limitations to this vibration control that should be considered. GE manuals and data sheets will provide you with additional details. Be sure to read through all technical information before unboxing your part, to ensure you understand all handling instructions and installation guidelines.