GE Service Manual

IS200VVIBH1C

1. Description

IS200VVIBH1C Technical Specifications

2. Specifications

Specification	Value
Manufacturer	**General Electric**
Series	**Mark VI Speedtronic**
Product	**Type IS200VVIBH1C VME Vibration Board**
Part	**Number IS200VVIBH1C**
Revision	**Total 1 Revision**
Functional	**Revision 1 C**
Assembly	**Type Normal Assembly**
About	**the IS200VVIBH1C**
The	**IS200VVIBH1C is a board component manufactured by GE for the Mark VI system. The Mark VI is one of GE's steam and gas turbine management systems released under the Speedtronic name during the '60s, '70s, '80s, and '90s. As one of the last systems released in this line, the Mark VI is also one of the most advanced. It is built with TMR (triple redundant modular) architecture and has a PC-based HMI (human-machine interface) that runs on a Windows platform. This HMI PC includes software that has been designed for turbine management, including fully programmable maintenance tools.**

3. Product Information

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Hardware Tips and Specifications

The IS200VVIBH1C functions as a Vibration Monitor card, which processes vibration probe signals originating from up to fourteen probes attached to DVIB or TVIB terminal boards. These are used to measure differential expansion, rotor eccentricity, vibration, or rotor axial position. Additional information on function and setup of probes may be found within the Mark VI Turbine Control System Guide (GEH-6421.) The IS200VVIBH1C has a single-slot faceplate attached to a component dense circuit board. The faceplate has only three components, which are all located at the very top of the covering; these are LED indicators labeled run/fail/status. The surface of the IS200VVIBH1C includes two backplane connectors placed on the rear edge of the board (P1 and P2.) The board has four other connectors designed with conductive traces and dots.

There are resistors, diodes, capacitors, and inductor coil/beads located on the board surface. Some of these components also appear on the back surface of the board. Integrated circuits located on the IS200VVIBH1C include FPGAs, RAM and SRAM chips. Installation procedures can be found in the abovementioned GE publication. Any capacitor, resistor, diode, transformer, or integrated circuit on the surface of this IS200VVIBH1C VME Vibration Board product's base printed circuit board is actually installed as part of a standard voltage suppression and regulation strategy standardized to this IS200VVIBH1C VME Vibration Board product's Mark VI Series. This IS200VVIBH1C VME Vibration Board device's IS200VVIBH1C VME Vibration Board functional product number is important for the research purposes of this IS200VVIBH1C VME Vibration Board personalized product page as it was actually specifically designed by General Electric to indicate a number of crucial IS200VVIBH1C VME Vibration Board device qualities through a series of consecutive functional naming chunks. One such chunk is this IS200VVIBH1C VME Vibration Board device's dual-functional IS200 series tag indicating both this IS200VVIBH1C VME Vibration Board device's normal Mark VI Series assembly type as well as this IS200VVIBH1C VME Vibration Board product's domestic original manufacture. Some of the other IS200VVIBH1C VME Vibration Board qualities indicated like this are its:

VVIB functional product abbreviation

Conformal PCB coating style

Group one Mark VI Series grouping

C-rated product revision

* **Part No.:** IS200VVIBH1C

* **Manufacturer:** General Electric

* **Product Type:** Vibration Monitor Board

* **Series:** Mark VI

* **Country of Manufacture:** United States (USA)

* **Description:** The IS200VVIBH1C is a Vibration Monitor Board developed by General Electric for the Mark VI system. It processes vibration probe signals from TVIB or DVIB terminal boards. Up to 14 probes can be connected to the terminal board directly, and two TVIB boards can be connected to the VIB processor board. The system is compatible with Bently Nevada probes, including Proximity, Velocity, Acceleration, Seismic, and Phase types.

* **Installation:**

1. Turn the VME processor rack off.

2. Slide the board into the edge connectors and push the top and bottom levers in.

3. Tighten the captive screws on the front panel's top and bottom.

* **Operation:** The board supports Bently Nevada probes in simplex or TMR modes. It supplies -28 V dc to the terminal board for Proximitor power. Signals are A/D converted and sent to the controller via the VME bus. Input samples are taken at high speeds (up to 4600 samples per second), and the peak-to-peak difference is used to calculate vibration, which is then scaled into engineering units (EU).

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* **Number of Channels:** 26 probes with two TVIB boards.

* **Probe Power:** -24 V dc from the -28 V dc bus; each probe supply is current limited; 12 mA load per transducer.

* **Buffered Outputs:** The amplitude accuracy for the signal to the Bently Nevada 3500 vibration analysis system is 0.1 percent.

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* **Vibration Monitoring Firmware:**

* **Channels 1–3:** Support position data from Proximitors, wideband vibration data from Proximitors, accelerometers with integrated outputs, Velomitors, and Seismics. Keyphasor probes allow extraction of 1X and 2X information.

* **Channels 4–8:** Similar to channels 1–3, supporting position and wideband vibration information.

* **Channels 9–12:** Only broadcast position information.

* **Channel 13:** Supports position feedback and Keyphasor feedback.

* **Wideband Vibration Filtering:**

* Input channels 14–21 use the Wideband Vibration Filtering function running at 4.6 kHz and 2.3 kHz.

* Gap or position filters use a low-pass filter (two poles, 8 Hz cutoff).

* Wideband vibration information can be conditioned via the FilterType parameter (Low-pass, Band-pass, or High-pass). Filters can be configured for 2, 4, 6, or 8 pole attenuation.

* Vfout (the filtered output) undergoes a min/max peak detect function. For speeds > 12 rpm, the capture window is 160 milliseconds.

* **Diagnostics:** The system executes both hardware (high/low) and software (high/low) input signal limit checks. If a probe pair exceeds limits, a fault, alert, or trip occurs. If an error is detected in the dc component, the software avoids a vibration trip (the ac component).