GE GE □□□ Series Service Manual

IS200VCMIH2BCD

1. Description

SPECIFICATIONS

3. Product Information

SPECIFICATIONS

Part Number: IS20OVCMIH2BCD

Manufacturer: General Electric

Series: Mark VIProduct function: VME Bus Master Controller Board

Board Type: 6U high VME boardSize: 0.787 inch wide

Availability: In Stock

Country of Manufacture: United States (USA)

Functional Description

IS20OVCMIH2BCD is a VME bus master controller board developed by GE. It is a part of Mark V control system. The VM board in the control and interface module communicates internaly with the boards in its rack and via the IONet with the other VCM cards. There are two versions, one for stmplex systems with one Etheret ONetport and one for TMR systems with three Ethemet ports, Asingle cable connects one control moduleto one or more interface modules in simplex systems In TMR systems, the VCMI with three separate loNet ports communicates with the three I/O channels Rx, Sx, and Tx, as wellas the two other control modules.

Features

The VCMI board uses Software Implemented Fault Tolerance (SIFT) voting.

Eachof the R,S, and TVCMI boards votes on inpu data rom each of the ONet connections. The resuts are sent to the controlers controlsgnal databases via the backplane VME bus.

IONet can support multiple I/O racks, each with Its own VCMI board. A second IONet porton the VCMI can be used asa parale IONet to Increase data through put for applications requiring low latency.

Processor: Texas Instruments TMS320C32 32-bit digital signal processor

Memory

Dual-port memory, 32 Kbytes in 32 bit transfer configuration

SRAM,64kx 32

Flash memory,128kx8

Communication

- Three IONet 10 Base2 Ethernet ports, BNC connectors, 10 Mbits/sec
- VME bus block transfers
- 1 RS-232C Serial port, male "D" style connector, 9600, 19,200, or 38,400 bits/sec- 1 Parallel port, eight bit bi-directional, EPP Version1.7 mode of IEEE 1284-1994Frame Rate
- 10 ms (100 Hz)for simplex
- 40 ms (25 Hz)for TMR

The IS200VCMIH2BCD is a component created by GE for the Mark VI system. The Mark VI is a gas/steam turbine management system released by General Electric as part of their “Speedtronic” line. This line of turbine management systems began with the Mark I in the 1960s and continued on through the release of the Mark VI and Mark VIe, which occurred decades later. The Mark VI is usually powered by a 125 Vdc battery system but can be powered by a 120/240 vac source using a power converter with a transformer to rectify this source to 125 Vdc. The MKVI is considered an indoor model of GE component part, as it was designed for operation within an air-cooled equipment room. The Mark VI Turbine Control System Series that this IS200VCMIH2BCD device is considered a component member of must be treated as a significant functional upgrade upon the previous industry-standard Mark V Turbine Control System Series of the same full extended series title, as the Mark VI Series added the alternative energy-based wind turbine functional application onto the steam and gas applications introduced earlier in the Mark V Series.

Hardware Tips and Specifications

The IS200VCMIH2BCD is mounted in slot one of the Central Control Module. This PCB allows internal communications to occur within I/O cards located within the card rack and also within other Control Modules or Protection Modules. The IS200VCMIH2BCD has a front faceplate attached. This faceplate has multiple components mounted into its surface. This includes three DIN connectors that are labeled IONet1 through IONet3. IS200VCMIH2BCD's faceplate additionally has one reset switch and one 9-pin male serial connector. The board's faceplate also has multiple LED indicators. This includes a set of three LEDs at the top and bottom of the faceplate, a set of eight LEDs toward the middle, and another set of six LEDs below these. Beyond the components available on the faceplate attached to the IS200VCMIH2BCD, some components unique to this circuit board include two backplane connectors and two vertical pin connectors, including a ribbon connector. The board has several connectors made up of conductive traces. In addition, the board has three transformers, several transistors, and over fifty integrated circuits, including two field programmable gate arrays. The board includes resistors, diodes, and capacitors. These components are located on both surfaces of the board's base plate.

The IS200VCMIH2BCD component board has some unique diagnostics, starting with the PCB's processor stall timer used to generate a signal SYSFAIL. When detected properly, this SYSFAIL signal should light this board's sole red indicator LED. For this specific process, this General Electric Mark VI series PCB has a watchdog timer set to a 150 ms. This VCMI board additionally plays a crucial role in triggering another added set of diagnostic alarms, informed by values otherwise shrouded in board control system redundancy. Unlike its grandfather part in the IS200VCMIH2BCD board, the IS200VCMIH2BCD model of printed circuit board is unique in its functional revision of "B", indicating an attached faceplate. Prior to purchase of any General Electric component part, it is always of great import to consider any alphabetic values included in the product number following the "H" PCB coating designation, as they reveal any revisions made to that original product. This PCB is available for both repair and replacement here at AX Control, with a standard lead repair time of one to two weeks.