GE Service Manual

IS200TRTDH1C

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About the IS200TRTDH1C

The IS200TRTDH1C is a board component manufactured by General Electric for the Mark VI system. Part of the Speedtronic line, the Mark VI is used for the management of heavy-duty gas and steam turbines. The Mark VI offers alarm display, process variable trending, and point control display through its operator interface.

The IS200TRTDH1C functions as an RTD Input terminal board. Physically, the board is composed of two terminal blocks with 24 screw connections per block, two 37-pin cable connectors (female), and a line of capacitors. The board carries the code “6BA00.” There is a shield bar attached to the left edge, directly to the side of the terminal blocks. The board has two factory-drilled oval cutouts to allow for screw mounts, as well as several notches along one board edge.

The IS200TRTDH1C connects to the VRTD board, communicating with two cable connections. The I/O board converts the TRTD inputs into temperature values (digital form) and then transfers these to the controller. The IS200TRTDH1C is a simplex board, and does not support TMR applications.

The IS200TRTDH1C has no jumpers or hardware settings. However, the board does feature hardware limit checking based on preset high/low levels. It also has software system limit checking used to generate alarms; these limits can be configured. Resistance of each RTD is checked and compared to its correct value. If it is high or low, a fault is created. Also, each connector located on the board has its own ID device that will produce an incompatibility fault of a mis-match occurs.

Specifications

Part Number: IS200TRTDH1C

Manufacturer: General Electric

Function: RTD Input Terminal Board

Series: Mark VIe

Number of Channels: 8

Operating Temperature: 0 to 60°C

Input Voltage: 125 V

Total Output: 400 W

Board Size: 6.25 in x 4.25 in

Availability: In Stock

Country of Origin: USA

Manual: GEH-6421L

Functional Description

The IS200TRTDH1C is an RTD Input Terminal Board designed for GE distributed gas turbine control systems within the Mark VIe series. It features 16 three-wire RTD inputs connected via two barrier-type terminal blocks. The inputs include noise-reduction circuitry to protect against high-frequency noise and surges. The board interacts with I/O processors to convert inputs into digital temperature values for the controller. There are four versions of the TRTD board:

TRTDH1B: A TMR variant using six DC-type connectors to fan out signals to three VRTD boards.

TRTDH1C: A simplex board equipped with two DC-type connectors for VRTD.

TRTDH1D: A simplex board featuring two PRTD, normal scan DC-type connections.

TRTDH2D: A simplex board featuring two PRTD, quick-scan DC-type connections.

Installation

The 16 RTD wires connect directly to two terminal blocks on the board, each secured with two screws.

Each block features 24 terminals capable of accommodating wires up to #12 AWG.

A shield terminal strip connected to the chassis ground is located on the left side of each terminal block.

When used in a TMR Mark VI control system, the TRTDH1B board provides redundant RTD inputs by fanning inputs to three VRTD boards in the R, S, and T racks.

Operation

The TRTD provides a 10 mA DC multiplexed (non-continuous) excitation current for grounded or ungrounded RTDs.

RTDs can be located up to 300 m (984 ft) from the turbine control cabinet, provided the maximum two-way cable resistance is 15.

The I/O processor's A/D converter samples signals at different rates based on normal or quick scan modes, with sample intervals based on the power system frequency.

Software handles the linearization for 15 chosen RTD types, and the system can identify short or open circuits via out-of-range measurements.

RTDs found outside hardware limits are temporarily deleted from scanned inputs to prevent negative effects on other channels, then restored automatically after 20 seconds or manually.

High-frequency decoupling to ground is provided at the signal entrance, and redundant pacemakers manage RTD multiplexing to prevent data loss in the event of a single cable or I/O processor failure.