GE Service Manual

IS200EPCTG1AAA

1. Description

IS200EPCTG1AAA Technical Specifications

2. Specifications

Specification	Value
Manufacturer	**General Electric**
Series	**Mark VI Speedtronic**
Functional	**Part Number IS200EPCTG1AAA**
Functional	**Description IS200EPCTG1AAA Exciter PT/CT Board**
Revision	**Total 3 Revisions**
Backwards-Compatibility	**1st two revisions**
Assembly	**Type Normal Assembly**

3. Product Information

IS200EPCTG1AAA Technical Specifications

Manufacturer General Electric

Series Mark VI Speedtronic

Functional Part Number IS200EPCTG1AAA

Functional Description IS200EPCTG1AAA Exciter PT/CT Board

Revision Total 3 Revisions

Backwards-Compatibility 1st two revisions

Assembly Type Normal Assembly

About the IS200EPCTG1AAA

The IS200EPCTG1AAA was manufactured by General Electric as part of its Mark VI Speedtronic system, which is designed for controlling industrial gas/steam turbines. The Speedtronic line began production in the late 1960s with the Mark I. Each Speedtronic system released since then has featured continual improvement over previous designs. The Mark VI offers Ethernet capability, a PC-based operator interface, and preloaded proprietary software like CIMPLICITY and GE Toolbox. The operator interface is a non-essential component that can be reinitialized at any time without affecting control of the system. This IS200EPCTG1AAA Exciter PT/CT Board printed circuit board or PCB for short's greater Mark VI Turbine Control System Series, as it is known at length, is actually generally a very much desirable commodity on its greater automated industrial promotional marketplace given its status as one of the final-developed GE Mark product series to feature the patented Speedtronic control system technology across a range of products.

Hardware Tips and Specifications

The IS200EPCTG1AAA is an Exciter PT/CT board. It includes 2 three-phase inputs for generator PT voltage and 2 current inputs for generator CT voltage. There is also a single analog input. The physical design of the IS200EPCTG1AAA is as follows: it has three terminal strips placed along its front edge, including a single 24-position strip and two 4-position strips. The rear edge has three vertical pin connectors. These are labeled J315, J305, and J308. The board has 12 test points, a jumper switch, 2 toroidal transformers, 4 transformers mounted in frames, and resistors, capacitors, and metal oxide varistors (MOVs.) For additional information regarding proper handling or installation of the IS200EPCTG1AAA, please refer back to manuals or data sheets that were provided with your OEM purchase. If these are no longer available AX Control may have duplicates available that can be included with your order. All parts shipped from our facility are carefully packaged to arrive in excellent working condition. Please let us know if you have any special requirements for shipping.

Before making any singular ultimate purchase decision on this IS200EPCTG1AAA Exciter PT/CT Board device, it is crucial to consider the fact that this specific IS200EPCTG1AAA Exciter PT/CT Board PCB is not the originally-developed device of its particular General Electric Mark VI Series functional role, as that would have been deemed the IS200EPCTG1 parent Exciter PT/CT Board notably not taking advantage of this IS200EPCTG1AAA Exciter PT/CT Board device's three-fold product revision table.

This IS200EPCTG1AAA Exciter PT/CT Board device is not surrounded online by very many originally-produced instructional manual materials on the internet; likely a result of its greater Mark VI Turbine Control System Series' status as one of the final-developed GE Mark product series. With this being the case, the IS200EPCTG1AAA Exciter PT/CT Board's IS200EPCTG1AAA Exciter PT/CT Board functional product number itself can be rolled out as a decently strong supplemental source of IS200EPCTG1AAA Exciter PT/CT Board hardware component and component specification details, as it codes for a series of specific IS200EPCTG1AAA Exciter PT/CT Board qualities through its selection of consecutive functional naming chunks. For starters, this IS200EPCTG1AAA Exciter PT/CT Board functional product number here begins with an iteration of the dual-functional IS200 series tag that was specifically included by GE to indirectly expose the IS200EPCTG1AAA Exciter PT/CT Board's normal Mark VI Turbine Control System Series assembly version on top of its standard domestic original General Electric manufacture location. Some of the other relevant hardware details of the IS200EPCTG1AAA Exciter PT/CT Board product offering revealed in this fashion include its:

EPCT functional product acronym

Group one Mark VI Series product grouping

Normal PCB coating style

Three-fold revision table

Specifications

* **Part No.:** IS200EPCTG1AAA
* **Manufacturer:** General Electric
* **Country of Manufacture:** United States of America (USA)
* **Number of Channels:** 6
* **Temperature:** -30 to 65oC
* **Size:** 8.6 cm Wide X 16.2 cm High
* **Product Type:** Exciter PT/CT (EPCT) terminal board
* **Availability:** In Stock
* **Series:** EX2100

Functional Description

* The IS200EPCTG1AAA is an Exciter PT/CT (EPCT) terminal board developed by GE as part of the EX2100 excitation system.
* It is designed to handle critical measurements of generator voltage and current via isolation transformers.
* The board integrates two 3-phase generator potential transformer (PT) voltage inputs and two generator current transformer (CT) inputs, with current options of 1 A or 5 A.
* All output signals from the isolation transformers are cabled to the EMIO board.
* The EPCT also accommodates a single analog input, which can accept either voltage or current inputs.
* To ensure redundancy and robustness, the system can incorporate up to three EPCT boards.

Generator Voltage and Current Measurement Configurations

* The board receives generator voltages from potential transformers and directs them through switches to TB1, allowing for cable lengths up to 1000 ft using 12 AWG wire.
* The PT inputs operate at a nominal 115 V rms and 50/60 Hz frequency and are fused for protection against electrical anomalies.
* Two isolation transformers perform a three-wire open delta voltage measurement, converting a 115 V rms input to a 1.533 V rms output.
* Generator current inputs are connected to fixed (non-pluggable) terminal blocks TB2 and TB3.

* Each current transformer features a 0-1 A rms winding and a 0-5 A rms winding, with only one wired to the EPCT.
* Cable lengths from the transformer to the board can extend up to 1000 ft using wire gauges up to #10 AWG.

Voltage Test Points and Considerations

* The board includes four voltage test points (TP9-12) on the secondary side of the generator current isolation transformers.
* These test points must not be grounded through the measuring device to ensure accuracy and prevent interference.

Application Data

* Components T1 through T6 denote the voltage and current isolation transformers.
* Terminal block TB1 is removable, while TB2 and TB3 are intentionally fixed to protect against potential CT open circuit situations.
* In a simplex control setup, voltage signals are directed via the J305 connector to the EMIO board in the M1 controller.
* In redundant configurations, signals are distributed to connectors J305, J308, and J315 to transmit to M1, M2, and C controllers.
* The board facilitates measurements through eight voltage test points (TP1-8) on the secondary side of the isolation transformers for diagnostic and testing purposes.
* The system uses three 25-pin sub-D connectors (J305, J308, and J315) to connect to the EBKP backplane, enabling communication and data transfer with the EMIO board.