GE GE □□□ Series Service Manual

DS200ADGIH1AAA

1. Description

SPECIFICATIONS:

2. Specifications

Specification	Value
Manufacturer	**GE General Electric**
Series	**Mark V**
Part	**Number DS200ADGIH1AAA**
Product	**Type Auxiliary Interface Board**
Revision	**Quantity 3 Revisions**
Backwards-Compatibility	**1st two revisions**
Assembly	**Type Normal Assembly**
About	**the DS200ADGIH1AAA**
This	**DS200ADGIH1AAA product offering from General ELectric is a printed circuit board originally manufactured for the Mark V Turbine Control System Series, as referenced to in the brief product description above. The Mark V Series that this DS200ADGIH1AAA printed circuit board or PCB for short belongs to, as you may have been able to guess based on its full extended series name, has a series of specific applications in the management and control systems in General Electric-compatible steam and gas turbine automated drive assemblies.**

3. Product Information

SPECIFICATIONS:

Part Number: DS200ADGIH1AAA

Manufacturer: General Electric

Series: EX2000

Product Type: Auxiliary DC 2000V Generator Interlock / Control Card

Analog output current: 0-20 mA

Power Requirements: +5 V dc

Operating temperature: -30 to + 65 ℃

Size: 17.8 cm wide x 33.02 cm

Repair: 3-7 days

Availability: In Stock

Country of Origin: United States

FUNCTIONAL DESCRIPTION

DS200ADGIH1AAA is an Auxiliary DC 2000V Generator Interlock / Control Card manufactured and designed by General Electric as part of the EX2000 Series used in GE Excitation Gas Turbine Control Systems. The interlock and control functions are associated with a high-voltage (2000V) auxiliary direct current (DC) system used to support the generator excitation and protection systems. This subsystem plays a critical role in ensuring safe operation, startup, synchronization, and shutdown of the turbine-generator unit. It interfaces closely with the turbine control system (TCS), generator control panels (GCP), and excitation control systems (such as static excitation systems or brushless exciters).

OPERATION:

The 2000V DC auxiliary system is often derived from a station battery system or a dedicated auxiliary DC bus and is primarily used for generator excitation, especially in static excitation systems where high DC voltage is directly applied to the generator field winding via a thyristor bridge. The interlock and control (INTR/CO) portion includes hardwired logic or programmable logic controller (PLC)-based interlocks that ensure critical sequences are enforced.

The generator breaker cannot close unless the field voltage is established.

Field flashing is blocked unless permissive signals (like turbine at rated speed, field breaker closed) are satisfied.

Faults (overvoltage, overcurrent, ground fault) in the 2kV DC system trigger trip signals to the turbine control system via fast-acting interlocks.

Protection relays (ANSI 59, 64, 87G, 40) for generator protection.

Synchronizing relays during grid synchronization.

Turbine supervisory instruments (TSI) ensuring mechanical readiness.

INSTALLATION:

In a typical gas turbine installation, the AUX DC2K GEN INTR/CO system components are housed within installation includes high-voltage DC cabling with insulation rated above 2kV, robust grounding systems, and interconnection with analog/digital I/Os of the Turbine Control System (e.g., Mark VIe, Woodward, or Allen-Bradley PLCs). Interface relays, fuses, and isolators are used to segment circuits for safety and maintenance. The DC interlock wiring must follow strict segregation and shielding practices to prevent electrical noise and interference with sensitive turbine control electronics.

Excitation cabinets

Generator control panels

Auxiliary power distribution panels

COMPATIBILITY:

Compatibility is critical between the 2kV DC system and the rest of the gas turbine's electrical control and protection infrastructure. The interlock/control circuits must:

Match the control logic of the turbine controller (via discrete I/Os, relay logic, or Modbus/TCP signals).

Be coordinated with the Excitation Control System (e.g., Basler DECS, GE EX2100).

Work in sync with breaker management relays (e.g., SEL-751, GE Multilin SR489).

DS200ADGIH1AAA Technical Specifications

Manufacturer GE General Electric

Series Mark V

Part Number DS200ADGIH1AAA

Product Type Auxiliary Interface Board

Revision Quantity 3 Revisions

Backwards-Compatibility 1st two revisions

Assembly Type Normal Assembly

About the DS200ADGIH1AAA

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Hardware Tips and Specifications

As with any product offering made available to the Mark V Turbine Control System Series, this DS200ADGIH1AAA device's intended functionality is introduced with its normal Mark V Series assembly's acceptance of a specialized series of hardware components and component specifications. The GE Auxiliary Interface Board DS200ADGIH1AAA features one 40-pin connector, 60 jumpers, and one 6-pin connector. The GE Auxiliary Interface Board DS200ADGIH1AAA also is populated with multiple test points. The board is 8 inches in width. DS200ADGIH1AAA is 6 inches in length and it is designed to be installed in the board cabinet of the drive. It has four screws and they align with a location on the board rack for installation with screws.

The test points in this DS200ADGIH1AAA device's assembly provide a means to test the circuits on the board. However, only a qualified servicer should test the board. The servicer

must have testing equipment that is calibrated and designed for the task. The controls must be set properly and the probes must be designed for use with the tester. Place the board on a flat surface and have a protective bag under the board.

Also, the DS200ADGIH1AAA Board servicer must wear a wrist strap at all times because of the risk of static. When the wrist strap is properly installed, one end of the strap is attached to your wrist and the other end is clipped to a metal leg of a workbench or desk. It can be attached to other metal structures too. The static is attracted to the metal ground and exits the board or your body. Another appropriate step to lessen the buildup of static is to avoid moving around while holding the board in your hands. The friction of walking causes the static to build up. This is especially true during cool and dry weather conditions. If a wrist strap is not available, you can also touch the static bag with the board inside it to a metal structure, like a chair or metal desk leg.