GE GE □□□ Series Service Manual

IS200EXAMG1AAB

1. Description

Technical Specifications

2. Specifications

Specification	Value
Product	**Number: IS200EXAMG1AAB**
Made	**By: GE Industrial**
Series	**Name: EX2100**
Board	**Style: Mk VI IS200**
Board	**Function: Exciter Attenuator Module**
Signal	**Type: ±50V Low Frequency Square-Wave**
Redundant/Simplex:	**Both**
Associated	**Board: EGDM**
Manufacturer	**GE Industrial Systems**
Series	**EX2100**
Part	**Number IS200EXAMG1AAB**
Functional	**Acronym EXAM**
Functional	**Description Exciter Attenuation Module Board**
PCB	**Coating Normal Coating**
Functional	**Revision 1 A**
Functional	**Revision 2 A**
Artwork	**Revision B**
About	**the IS200EXAMG1AAB**
This	**IS200EXAMG1AAB printed circuit board was originally designed by General Electric shell company GE Industrial Systems; intended for use in their EX2100 Series of Excitation Control Systems and Control System Option Boards. This is a modified version of the original parent IS200EXAMG1 board, and comes revised through three significant product revisions. This IS200EXAMG1AAB printed circuit board can be more accurately described as an Exciter Attentuation Module, as seen in its original,**

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Hardware Tips and Specifications

The IS200EXAMG1AAB Exciter Attenuation Module's important, specific hardware specifications are best understood when contextualized alongside its intended function within the greater EX2100E Series Drive Assembly. This EXAM module, as it is oftentimes abbreviated as, drives the electrical center of its field winding with a ac voltage that is categorized as lower-frequency, at least relative to the ground. Current flow detection for this process is detected through the use of a sensing resistor which is picked up by this EXAM module and measured by the corresponding EGDM module. This signal is sent to the correct EX2100E Series controller for monitoring and alarming through the use of a singular fiber-optic link. Considering the limited status of original factory-issued instructional materials concerning the IS200EXAMG1AAB board specifically, the rest off the information posited on this IS200EXAMG1AAB product page below has been sourced from a thorough breakdown of the individualized IS200EXAMG1AAB product number.

A primary recognizable component of the IS200EXAMG1AAB product number can be defined as its IS200 series definition tag, which actually holds dual naming responsibilities for this IS200EXAMG1AAB printed circuit board. This IS200 series tag identifies the IS200EXAMG1AAB Exciter Attenuation Module as a domestically-manufactured General Electric product with no special assembly version. This board's location of the original manufacturer can be more specifically attributed to General Electrics' Salem, Virginia factory plant location, where all IS200-rated boards come from. The IS200EXAMG1AAB product number's IS200 series tag is followed by an instance of the EXAM functional acronym, which exists as a convenient conversational promotion shorthand of the lengthy IS200EXAMG1AAB product number. This EXAM acronym is followed by the G1 series grouping tag, which designates this IS200EXAMG1AAB Exciter Attenuation Module as a EX2100E Series Group One product that is protected by a layer of normal printed circuit board protective coating. The final "AAB" digits present at the end of its product number describe this printed circuit board's three-fold revision history.

SPECIFICATIONS:

Part No.: IS200EXAMG1AAB

Manufacturer: General Electric

Product Type: Exciter Attenuation Module

Group Variation: H2, Dual System

Series: EX2100

Number of Channels: 13

Description: I/O Terminal Board

Ac input frequency: 480 Hz maximum

Ambient temperature: 0 to 40°C

Functionality: Field Current and Voltage Feedback

Number of Selector Settings: 8

Control Sections: Up to Three Redundant Control Sections

Operating System: Dual System

Availability: In Stock

Country of Manufacture: United States (USA)

Manual: GEI-100509B

FUNCTIONAL DESCRIPTION:

IS200EXAMG1AAB is an Exciter Attenuation Module manufactured and designed by General Electric and is part of the EX2100 Series used in Excitation turbine control systems. The Exciter Attenuation Module (IS200EXAM or EXAM), when used alongside the Exciter Ground Detector Module (IS200EGDM or EGDM), forms the ground detection system for the EX2100 Excitation Control. The EXAM is installed in the High Voltage Interface (HVI) module within the auxiliary cabinet. It acts by reducing the high voltage from the bridge,

converting it to a manageable level, and providing attenuation between the field bus and the EGDM.

The EXAM and EGDM(s) are linked via the Exciter Power Backplane (IS200EPBP or EPBP). A single 9-pin cable connects the EXAM to the EPBP, while the EGDMs are connected to the EPBP through a 96-pin P2 connector. Only one EXAM is necessary for both simplex and triple modular redundant (TMR) configurations, with the interconnection remaining the same in both cases. The field voltage (Vbus+ and Vbus−) varies from 125 V dc to 1000 V dc and the ac line-to-line voltages power potential transformer (PPT) vary from 120 to 1300 V ac rms. The EXAM has two variations of filter capacitance that are selectable through jumpers JP1 and JP2.

PPT voltages less than 750 V rms

PPT voltages greater than 750 V rms

FUNCTIONS:

The EGDM manages the activation for the field ground test and master selection by controlling a relay on the EXAM. This relay features a 24 V DC coil with diode suppression and operates with less than 20 mA.

In its default state, the relay remains de-energized and provides feedback to the M1 section of the TMR control or the sole control in a simplex setup. When energized, the relay sends feedback to the M2 section of the TMR control.

In TMR configurations, three EGDMs are set up as Controller (C), Master 1 (M1), and Master 2 (M2). Each EGDM is automatically configured via the program pins of the 96-pin P2 connector on the EPBP.

The DSPX board sends information to EGDM C about which master provides the 50 V AC square-wave signal to the sense resistor in the EXAM. EGDM C will activate the relay in the EXAM if M2 is the master, or leave it unpowered if M1 is the master.

This signal enables the signal generator on the active master and selects the test command source for each EGDM (M1, M2, and C). The active master then sends a positive or negative 50 V AC square-wave signal to the EXAM, which is applied to one end of the sense resistor (Rx).