GE GE □□□ Series Service Manual

IS200EGDMH1A

1. Description

SPECIFICATIONS:

2. Specifications

Specification	Value
Dimensions	**Height: 9 inches / Depth: 6 Inches / Faceplate Width: 1 1/2 Inches**
Functional	**Acronym (Abbreviation) EGDM**
Instruction	**Manual Number GEI-100467 (GEH-6632 Series Manual)**
Manufacturer	**GE Energy**
Mounting	**Location Exciter Power Backplane Rack (EPBP)**
Product	**Type Exciter Field Ground Detector Module**
Series	**/ Product Line Excitation Control System EX2100**
Simplex	**System Qty 1 EGDM Used**
Weight	**1lbs 3oz**
Wiring	**Board Description Bridge and Protection Module**
About	**the IS200EGDMH1A**
The	**IS200EGDMH1A model is an exciter field ground detector module, which is what the functional abbreviation of EGDM stands for. During installation, this module will mount in the exciter power backplane rack and will be in proximity to the EPSM module. This module operates on a simplex and redundant system, the simplex system requires one EGDM, while a redundant system requires three EGDM modules. The IS200EGDMH1A is used in conjunction with an EXAM module, together these two modules work to ascertain the pot**

3. Product Information

SPECIFICATIONS:

Part Number: IS200EGDMH1A

Manufacturer: General Electric

Series: EX2100

Product Type: Exciter Ground Detector Module

Operating Temperature: -30 to 65 o C

Repair: 3-7 Days

Country of Origin: USA

Availability: In Stock

Manual: GEI-100467

FUNCTIONAL DESCRIPTION:

IS200EGDMH1A is an Exciter Ground Detector Module manufactured and designed by General Electric as part of the EX2100 Series used in Excitation Control Systems. It mounts in the Exciter Power Backplane rack as a double slot, double height (6U) form factor board (EPBP). The field ground detector measures the resistance in the field between any point in the field circuit of the generator and the ground, whether it is on the ac or dc side. A redundant system will have three EGDMs, but a simplex system will have one. Figure 1 displays the position of the EGDM(s). In order to communicate with the EGDM(s), EXAM, the attenuator module, measures the voltage across the ground sensing resistor. The High Voltage Module, which is housed in the Auxiliary Panel, has the EXAM module mounted in it.

EGDM and Attenuator Module Mounting

Fig 1: EGDM and Attenuator Module Mounting

The trio of EGDM boards is set up as Controller (C), Master 1 (M1), and Master 2 (M2) in a redundant control (M2). A group of program pins on the P2 connector control each EGDM's setup. The DSPX transmits data to EGDM C via the EISB in the controller rack about which the master delivers the driving signal to the sensing resistor in the Attenuator Module. When C receives this data through the fiber-optic link, depending on whether M2 is the selected driver or M1 is the selected master, C either powers or empowers the relay in the Attenuator Module. A differential signal that identifies the selected master is simultaneously transmitted to M1 and M2.

This signal selects the test command source on each module and activates the signal generator on the active master (M1, M2, and C). The active master now gets an oscillator signal from the DSPX via the EISB across the fiber optic link, which it transforms into a positive or negative 50-volt signal. This square wave voltage is applied to one end of the sense resistor after being transmitted via cable to the EXAM module.

Ground Detector Functional Block Diagram

Fig 2: Ground Detector Functional Block Diagram

The Sense Resistor in the EXAM module sends an attenuated (10:1) differential signal to the signal conditioner. A straightforward unity gain differential amplifier with a high common-mode rejection ratio serves as the signal conditioner, which is followed by an A-to-D converter (Voltage Controlled Oscillator VCO). A fiber optic transmitter is fed by the VCO. Due to the high common-mode voltage at the sense resistor, the signal conditioner circuitry is powered by an isolated power source to protect worker and equipment safety. When instructed to do so by the control section, the signal conditioner grounds the bridge side of the attenuated Sense Resistor and uses this information to determine the power amplifier output level.

IS200EGDMH1A Technical Specifications

Dimensions Height: 9 inches / Depth: 6 Inches / Faceplate Width: 1 1/2 Inches

Functional Acronym (Abbreviation) EGDM

Instruction Manual Number GEI-100467 (GEH-6632 Series Manual)

Manufacturer GE Energy

Mounting Location Exciter Power Backplane Rack (EPBP)

Product Type Exciter Field Ground Detector Module

Series / Product Line Excitation Control System EX2100

Simplex System Qty 1 EGDM Used

Weight 1lbs 3oz

Wiring Board Description Bridge and Protection Module

About the IS200EGDMH1A

The IS200EGDMH1A model is an exciter field ground detector module, which is what the functional abbreviation of EGDM stands for. During installation, this module will mount in the exciter power backplane rack and will be in proximity to the EPSM module. This module operates on a simplex and redundant system, the simplex system requires one EGDM, while a redundant system requires three EGDM modules. The IS200EGDMH1A is used in conjunction with an EXAM module, together these two modules work to ascertain the potential of field ground leakages on any point of the DC or AC side.

When the EGDM module and DSPX module are attached through fiber-optic cables, the EGDM module will send the voltage that has been used over to the DSPX module through the fiber-optics; after this process has occurred the voltage will then be checked, and alarms will be attached by the DSPX. The EGDM module has three LED indicators on the faceplate. The three indicators on the IS200EGDMH1A module are a power indicator, an active indicator, and a selective master indicator.