GE GE □□□ Series Service Manual

IS200EHPAG1DAB

1. Description

SPECIFICATIONS:

3. Product Information

SPECIFICATIONS:

Part Number: IS200EHPAG1D

Manufacturer: General Electric

Series: EX2100

Microprocessor: Intel Celeron 650 MHz

Memory: 128 MB SDRAM

Operating system: QNX

Product Type: Exciter Gate Pulse Amplifier Board

Voltage Range: 14 to 32 V dc

Maximum Lead Resistance: 15 Ω

Storage temperature: -40 to 80° C

Operating temperature: 0 to 70° C

Technology: Surface mount

Size: 16.2 cm high x 8.6 cm

Repair: 3-7 Day

Availability: In Stock

Weight: 2 lbs

Country of Origin: United States

Manual: GEI-100532A

FUNCTIONAL DESCRIPTION:

IS200EHPAG1D is an Exciter Gate Pulse Amplifier Board manufactured and designed by General Electric as part of the EX2100 Series used in GE Excitation Control Systems. The IS200EHPA Gate Pulse Amplifier Board (EHPA) is a component of the 100 mm EX2100™ Excitation Control system. It processes gate commands from the ESEL to manage the firing of up to six Silicon Controlled Rectifiers (SCRs) on the Power Bridge. Additionally, it serves as an interface for monitoring current conduction, bridge airflow, and temperature. The EHPA's functional model, highlighting its primary inputs and outputs, is illustrated in the accompanying diagram. Powered by a 125 V DC nominal source from the EPDM, the board features an onboard DC/DC converter to support SCR gating across the entire input voltage range. Status indicators, in the form of LEDs, provide visual feedback on various parameters, including EHPA power supply health, input gate commands from ESEL, SCR output signals, bridge current, line filter status, cooling fan operation, bridge temperature, alarms, and fault conditions.

GAT COMMAND INPUTS:

The EHPA receives six gate commands from the ESEL via a twisted-pair, multiconductor shielded cable. These commands are transmitted over differential pairs, where they are optically isolated, filtered, AC-coupled, and then directed to the Gate Pulse Amplifier (GPA). Each SCR has a dedicated GPA, ensuring independent operation. The EHPA also provides galvanic isolation between the gates of the individual SCRs.

SENSOR INPUTS:

The EHPA monitors conduction currents across all three phases of the bridge input. It functions as an interface between the Hall Effect sensors on the EXCS boards and the system controller. The EHPA supplies power to the EXCS and receives feedback signals from the EXCS, indicating the current flow status through each phase of the three-phase bridge input. These signals are received at connectors J9 and J10, where they are processed by the EHPA before transmitting the bridge status to the controller.

Bridge temperature is monitored via either an RTD (thermistor) sensor input or temperature switch input. For new exciters, only the RTD input is utilized, with jumpers on the EHPA disabling the temperature switch inputs. When retrofitting a bridge with an EX2100 control, the two temperature switch inputs are used to connect with the existing temperature switches on the bridge, and the RTD input is left disconnected to deactivate it. Both the RTD and temperature switch inputs are connected to the EHPA through J13.

Airflow sensors (fan rotation) detect loss of fan cooling in the bridge. One fan can be connected to the EHPA through J12. The EHPA accepts either a pulsed or dry-contact, normally open sensor input from the fan. The mode of signal detection is configured through the berg jumper JP2.