GE GE □□□ Series Service Manual

IS200EPSMG1A

1. Description

SPECIFICATIONS

2. Specifications

Specification	Value
Board	**Type Exciter Power Supply Module**
Functional	**Acronym (Abbreviation) EPSM**
Location	**Mount in the EPBP Backplane**
Manual	**GEI-100462 or GEH-6632 (EX2100 Users Guide)**
Manufacturer	**GE Industrial Systems, General Electric Company USA, GE Energy**
Model	**Number IS200EPSMG1A**
Series	**/ Product Family EX2100 Excitation Control Exciter**
Used	**With EPDM Module**
Weight	**1lbs 8oz**
About	**the IS200EPSMG1A**
Excitation	**Power Supply Model number IS200EPSMG1A is mounted in the EPBP backplane and provides logic level power to other controllers. In terms of power for the EPSM models, a power supply of 125 VDC is sent from the EPDM, after the power supply has been received the EPSM will generate the voltages into 5 VDC, 15 VDC, or 24 VDC. The power supplies for the M1, M2, and C controllers are located in the power supply module which is located underneath the control rack in the control cabinet.**

3. Product Information

SPECIFICATIONS

Part Number: IS200EPSMG1A

Manufacturer: General Electric

Country of Manufacture: United States(USA)

Series: EX2100

Manual: GEI-100462

Repair: 3-5 Days

Function: Exciter Power Supply Module

Functional Description

IS200EPSMG1A is an Exciter Power Supply Module developed by GE. It is a part of EX2100 turbine Control System. The EX2100 Excitation Control System and the EX2100 Regulator Control both use this Exciter Power Supply Module (EPSM). EPSM Group 1 (EPSMG1) modules are used in the excitation control system, while EPSM Group 2 (EPSMG2) modules are used in the regulator control. The Exciter Regulator Power Supply Daughter board (EPSD) is mounted to the EPSMG2. The EPSM is made up of two major parts: a buck-regulator and a push-pull inverter. The buck-regulator converts the input voltage to an intermediate voltage of 50 V dc. This intermediate voltage is then fed into a push-pull inverter, which generates the necessary multiple output voltages. The push-pull inverter's transformer provides high-voltage isolation between the input voltage source and the output supplied to the control system.

Excitation Control System Application

EPSMG1 converts 125 V dc from the power distribution module (PDM) to the voltages needed for EX2100 excitation control. Each of the controllers M1, M2, and C is powered by three independent EPSMG1s. They have installed in the control cabinet's EPBPG, A Exciter Power Backplane (EPBP), which is located beneath the EBKPG A Exciter Backplane (EBKP). Power is transferred from the EPSMG1 to the EPBP via connectors P1 and P2 for cables to the EBKP and other boards. The EPSMG1 provides power to the control assembly backplane at +5 V dc, 15 V dc, and 24 V dc. External modules are also powered as follows:

24 volts direct current to power the fans, de-excitation module, crowbar module, ground detector module, and field voltage/current module.

Isolated +70 V dc for terminal board contact wetting

Regulator Control Application

EPSMG2 converts the dc link bus voltage into the voltages needed to control the EX2100 regulator. One EPSMG2 is installed in the ERBPH A Exciter Regulator Backplane in simplex systems (ERBP). In redundant systems, one EPSMG2 is installed in the ERBP (M1) and another in the ERRBH A Exciter Regulator Redundant Backplane (ERRB, M2/C). By increasing the creep and clearance, the EPSD mounted on EPSMG2 modifies the power input path, allowing EPSMG2 to accept higher voltages. It also acts as a fuse between the power source for the regulator (dc link) and the buck-regulator. The EPSMG2 provides the ERBP and ERRB with +5 V dc, 15 V dc, and 24 V dc. External modules are also powered as follows:

24 volts direct current (P24B/N24B) to power fans, relays, and the dc feedback board

Contact-wetting isolated +70 V dc (P70) on the terminal board, dynamic discharge board, and redundant relay board

20 V ac isolated (AC17) to power the IGBT gate and dynamic discharge board

55 V dc (P55/N55) to the options card's ground detector circuits

IS200EPSMG1A Technical Specifications

Board Type Exciter Power Supply Module

Functional Acronym (Abbreviation) EPSM

Location Mount in the EPBP Backplane

Manual GEI-100462 or GEH-6632 (EX2100 Users Guide)

Manufacturer GE Industrial Systems, General Electric Company USA, GE Energy

Model Number IS200EPSMG1A

Series / Product Family EX2100 Excitation Control Exciter

Used With EPDM Module

Weight 1lbs 8oz

About the IS200EPSMG1A

Excitation Power Supply Model number IS200EPSMG1A is mounted in the EPBP backplane and provides logic level power to other controllers. In terms of power for the EPSM models, a power supply of 125 VDC is sent from the EPDM, after the power supply has been received the EPSM will generate the voltages into 5 VDC, 15 VDC, or 24 VDC. The power supplies for the M1, M2, and C controllers are located in the power supply module which is located underneath the control rack in the control cabinet.

Power from the EPSM module is also sent to external modules. The twenty-four VDC power is supplied to the crowbar module, EDCF, EGDM, and EDEX de-excitation module. An isolated seventy VDC that is used for contact wetting is used for the ECTB and EXTB modules. As the IS200EPSMG1A module is an A version, this board is not backward compatible. The product-specific manual that is used with the IS200EPSMG1A board is GEI-100462. The series manual is the GEH-6632 and information about the EPSM board can be found on page fifty-three.