GE GE □□□ Series Service Manual

IS200EPSMG2A

1. Description

SPECIFICATIONS:

2. Specifications

Specification	Value
Alphanumeric	**Catalog Number IS200EPSMG2A**
Board	**Description Exciter Power Supply Module**
Board	**Type Power Supply Board**
Contact	**Wetting Supply 70 VDC**
VDC	**Power Supply 5, 15 and 24**
Weight	**Less than 2 pounds**
Functional	**Revision 1 A**
About	**the IS200EPSMG2A**
This	**IS200EPSMG2A printed circuit board product offering from General Electric was originally designed and produced with a specific placement in the EX2100 Excitation Control System Series, as detailed in the IS200EPSMG2A brief product description inserted above for your convenience. The EX2100 Series, as indicated through its full extended series name, has specific applications in excitation processes specifically. This IS200EPSMG2A device's EX2100 Series original instructional manual materials are largely unavailable online. This IS200EPSMG2A device is actually not the original product of its specific EX2100 Series functionality, as that would have to be considered the IS200EPSMG2 parent Power Supply Module noticeably missing this IS200EP**

3. Product Information

SPECIFICATIONS:

Part Number: IS200EPSMG2A

Manufacturer: General Electric

Series: EX2100

Product Type: Exciter Power Supply Module

Weight: 2 lbs

Size: 15.9 cm high x 17.8 cm

Operating Temperature: -30 to +65°C

Country of Origin: United States

Availability: In Stock

Manual: GEI-100462A

FUNCTIONAL DESCRIPTION:

IS200EPSMG2A is an Exciter Power Supply Module Manufactured and designed by General Electric as part of the EX2100 Series used in the GE Excitation Turbine Control System and the EX2100 Regulator Control. EPSM Group 1 modules (EPSMG1) are used in the excitation control system and EPSM Group 2 modules (EPSMG2) are used in the regulator control. EPSMG2 includes an IS200EPSDG_A Exciter Regulator Power Supply Daughter board (EPSD) mounted to it. The EPSM is comprised of 2 major sections, a buck regulator and a push-pull inverter. The buck-regulator converts the input voltage to a 50 V dc intermediate voltage. This intermediate voltage is then applied to a push-pull inverter to create the required multiple output voltages. The transformer used in the push-pull inverter provides high-voltage isolation between the input voltage source and the output supplied to the control system.

EX2100 EXCITATION CONTROL SYSTEM APPLICATION:

EPSMG1 converts 125 V dc from the power distribution module (PDM) into the voltages required for the EX2100 excitation control. Three independent EPSMG1s supply power to each of the controllers M1, M2, and C. They are mounted in the IS200EPBPG_A Exciter Power Backplane (EPBP) located below the IS200EBKPG_A Exciter Backplane (EBKP) in the control cabinet. Connectors P1 and P2 carry power from the EPSMG1 to EPBP for cables to EBKP and other boards. The EPSMG1 supplies +5 V dc, ±15 V dc, and +24 V dc to the control assembly backplane. Power is also supplied to external modules as follows:

±24 V dc to power the fans, de-excitation module, crowbar module, ground detector module, and field voltage/current module.

Isolated +70 V dc for contact wetting to the terminal boards.

EX2100 REGULATOR CONTROL APPLICATION:

EPSMG2 converts the dc link bus voltage into the voltages required for the EX2100 regulator control. In simplex systems, one EPSMG2 is mounted in the IS200ERBPH_A Exciter Regulator Backplane (ERBP). In redundant systems, one EPSMG2 is mounted in ERBP (M1) and a second EPSMG2 is mounted in the IS200ERRBH_A Exciter Regulator Redundant Backplane (ERRB, M2/C). The EPSD that is mounted on EPSMG2 modifies the power input path to allow EPSMG2 to accept higher voltages by increasing the creep and clearance. It also provides a fuse between the regulator power source (DC link) and the buck regulator. The EPSMG2 supplies +5 V dc, ±15 V dc, and +24 V dc to the ERBP and ERRB. Power is also supplied to external modules as follows:

±24 V dc (P24B/N24B) to power fans, relays, and the dc feedback board

Isolated +70 V dc (P70) for contact-wetting on the terminal board, dynamic discharge board, and redundant relay board

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

±55 V dc (P55/N55) to the ground detector circuits on the options card

IS200EPSMG2A Technical Specifications

Alphanumeric Catalog Number IS200EPSMG2A

Board Description Exciter Power Supply Module

Board Type Power Supply Board

Contact Wetting Supply 70 VDC

VDC Power Supply 5, 15 and 24

Weight Less than 2 pounds

Functional Revision 1 A

About the IS200EPSMG2A

This IS200EPSMG2A printed circuit board product offering from General Electric was originally designed and produced with a specific placement in the EX2100 Excitation Control System Series, as detailed in the IS200EPSMG2A brief product description inserted above for your convenience. The EX2100 Series, as indicated through its full extended series name, has specific applications in excitation processes specifically. This IS200EPSMG2A device's EX2100 Series original instructional manual materials are largely unavailable online. This IS200EPSMG2A device is actually not the original product of its specific EX2100 Series functionality, as that would have to be considered the IS200EPSMG2 parent Power Supply Module noticeably missing this IS200EPSMG2A product's A-rated functional product revision.

Hardware Tips and Specifications

The IS200EPSMG2A is a power supply module that pairs with an EPDM module, the EPDM module will supply a VDC of 125. When connected to external modules a power of 24 VDC will be sent to the EDCF, EDEX, and EGDM modules. Power supplies pertaining to the M1, M2, and C controllers are located and mounted underneath the control rack which is in one of the control cabinets. This version of the IS200EPSM is 2A. This means that this model is also not backward compatible. When power is being supplied to the EXTB and ECTB it will be an isolated seventy VDC, the VDC is used for contact wetting. Three self-sufficient power supplies are used to power the C, M1, and M2 controllers. When being powered the power that has come from the EPDM model the IS200EPSMG2A is attached to will be converted to be best used with the module.

The best manuals that are used for installation and powering of the IS200EPSMG2A refer to the GEH-6632 EX2100 Excitation Control Users Guide or the GEI-100462 manual which is specifically used for use with the IS200EPSMG modules.

Given the fact that this IS200EPSMG2A device belongs to a now largely-obsolete legacy General Electric product series in the EX2100, it is no great surprise to find that this IS200EPSMG2A product is not surrounded by any great amount of originally-pertinent instructional manual materials online. For example, the IS200EPSMG2A functional product

number is started off with the dual-functional IS200 series tag responsible for delegating both this IS200EPSMG2A device's normal EX2100 Series assembly version as well as its domestic original manufacture location. This initial dual-functional IS200EPSMG2A product number segment is followed through the EPSM functional product acronym, which was created with the intention of existing as a convenient shorthand stand-in for the lengthy IS200EPSMG2A product number itself. This is followed too in the IS200EPSMG2A functional product number; through an instance of another dual-functional naming segment in the G2 series grouping tag delegating this IS200EPSMG2A product's normal style of PCB protective coating as well as its group 2 EX2100 Series product grouping. The final trailing A digit on the IS200EPSMG2A functional product number is telling of this IS200EPSMG2A device's A-rated functional product revision.