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## Functional Description

The IS200EPDM Exciter Power Distribution Module (EPDM) is used in the EX2100™ Excitation Control to provide power for the control, I/O, and protection boards of the exciter. It is mounted on the side of the IS200EPBP Exciter Power Backplane (EPBP) and receives 125 V dc power from the station battery and accepts one or two 120 V ac power inputs for backup. All power supply inputs are received through a board mounted terminal block (TB1) and are filtered. Each ac supply is rectified to 125 V dc in an external Ac to Dc Converter (DACA). The resulting two or three dc voltages are diode coupled through external diodes to create the dc source power supply, designated P125V and R125V. These voltages are center grounded and are nominally +62.5 V and –62.5 V to ground. The module is chassis grounded and safety grounded through four of the board mounting holes.

Two 12-plug connectors (JDACA1 and JDACA2) connect the ac power sources from the terminal block (AC1 and AC2) to the external DACA#1 and DACA#2, and return the DACA outputs to the 125 V dc lines (P125 and R125).

Individual power supply outputs to each of the exciter boards are fused, have an on/off toggle switch (except the EXTB board), and a green LED indicator to show power availability. The outputs supply up to three IS200EGPA Exciter Gate Pulse Amplifier Boards (EGPA), the IS200EXTB Exciter Terminal Board (EXTB), and three IS200EPSM Exciter Power Supply Modules (EPSM) serving three controllers. A separate connector is provided for each output and these are wired to the EPBP for distribution.

Table 1. Steady-state Current of Each Device and Maximum Total Current Required from 125 V Dc Source

Device (Quantity)	Current Each (A)	Current (A)
EGPA board (3)	0.9 (worst case calculated)	2.7
EXTB board (1)	0.1 + 2	2.1
EPSM module M1PS (1)	2.8 (worst case calculated)	2.8
EPSM module M2PS (1)	2.2 (worst case calculated)	2.2
EPSM module CPS (1)	1.8 (worst case calculated)	1.8
Spare (1)	1.8	1.8
		<b>Total = 13.4 (dc)</b>

Table 2. Steady-state Current of Each Device and Maximum Total Current Required from 120 V Ac Sources (AC1, AC2, and AC3)

Device	Current (A)	Source	Total Current Required (A)
DACA #1	10	AC1	10
DACA #2	10	AC2	10

## Application Data

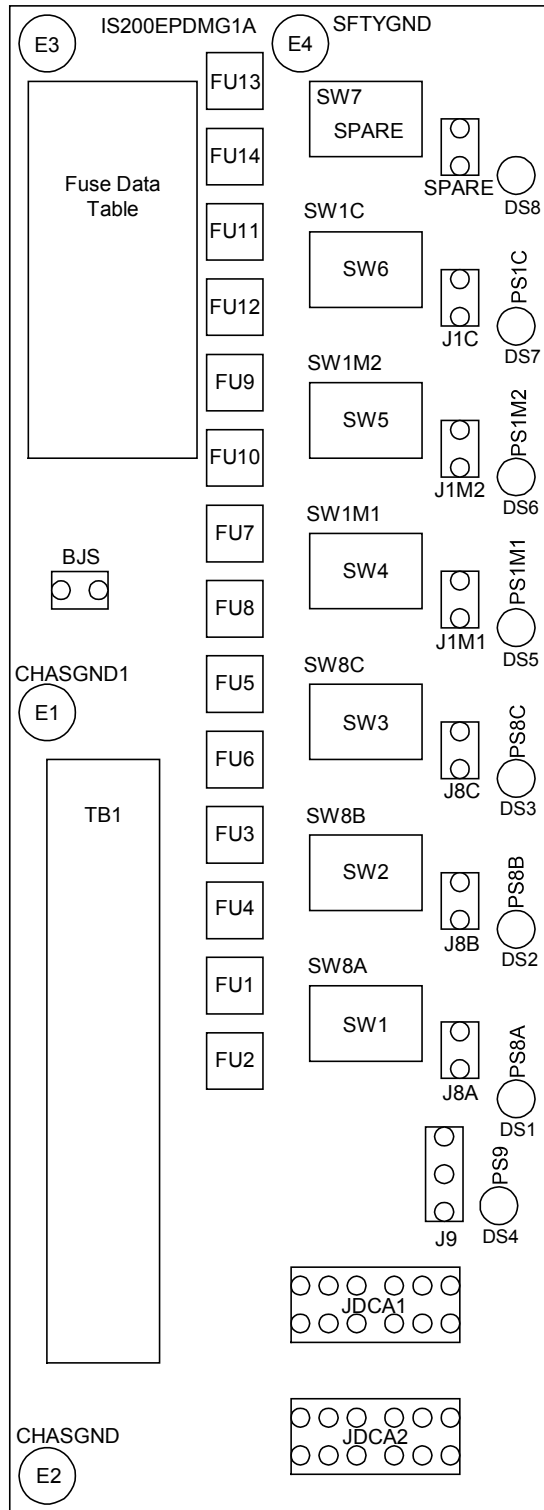
The EPDM module includes a 24-point terminal block, ten plug connectors, seven switches, fourteen fuses, four grounded mounting holes, eight LED indicators, and one adjustable jumper. All connectors are rated 600 V ac or dc. The terminal board is rated 300 V (10 A per pin); all switches are rated 125 V dc, 6 A. The adjustable jumper (BJS) is for isolation of ground reference on systems with external reference. See Figure 1 for an EPDM module layout diagram. Refer to the following tables for board component information:

Table	Description
3	Connector descriptions
4	JDACA1 and JDACA2 pin signals
5	Green LED indicators
6	Switches
7	Fuses (250 V, slow)
8	Mounting hole grounds

Table 3. Terminal Board and Connectors

Nomenclature	Connector Description	Function	Pin Signals
TB1	24-pin pluggable terminal board	External 125 V dc	1, 3, 5 = P125    2, 4, 6 = R125
TB1	24-pin pluggable terminal board	External input AC1	13, 15 = Hot    17, 19 = Neutral
TB1	24-pin pluggable terminal board	External input AC2	21, 23 = Hot    22, 24 = Neutral
JDACA1	12-plug	DACA#1 connection	See Table 4
JDACA2	12-plug	DACA#2 connection	See Table 4
J8A-EGPA	2-pin	EGPA board #1 connect	1 = P125    2 = R125
J8B-EGPA	2-pin	EGPA board #2 connect	1 = P125    2 = R125
J8C-EGPA	2-pin	EGPA board #3 connect	1 = P125    2 = R125
J9-EXTB	3-plug	EXTB board connection	1 = P125    2 = NC    3 = R125
J1M1	2-plug	M1PS board connection	1 = P125    2 = R125
J1M2	2-plug	M2PS board connection	1 = P125    2 = R125
J1C	2-plug	CPS board connection	1 = P125    2 = R125
Spare*	2-plug	Spare (PWB only)	1 = P125    2 = R125

\*The outlines for spare components are shown on the board, but the actual components are not included at this time.



**Note** The outlines for spare components (SW7, DS8, and plug) are shown on the board, but the actual components are not included at this time.

Figure 1. EPDM Module Layout Diagram

Table 4. JDACA1 and JDACA2 Pin Signals

Pin Number	Nomenclature	Description
1	AC1H/AC2H	External AC1/AC2 power source hot
2	NC	Not connected
3	AC1N/AC2N	External AC1/AC2 power source neutral
4, 5, 6	NC	Not connected
7	R125VBAT	External 125 V dc power source from station battery
8	NC	Not connected
9	P125V	Positive 125 V dc
10	R125VBAT	External 125 V dc power return
11	NC	Not connected
12	P125V	Positive 125 V dc

Table 5. Green LED Indicators

LED	Nomenclature	Description
DS1	PS8A	Power to EGPA#1 board OK
DS2	PS8B	Power to EGPA#2 board OK
DS3	PS8C	Power to EGPA#3 board OK
DS4	PS9	Power to EXTB board OK
DS5	PS1M1	Power to EPSM module master #1 OK
DS6	PS1M2	Power to EPSM module master #2 OK
DS7	PS1C	Power to EPSM module controller OK
DS8*	-----	Spare for future PWB usage

\*The outlines for spare components are shown on the board, but the actual components are not included at this time.

Table 6. Switches

Switch	Nomenclature	Description
SW1	SW8A	Power to EGPA#1 board
SW2	SW8B	Power to EGPA#2 board
SW3	SW8C	Power to EGPA#3 board
SW4	SW1M1	Power to EPSM module master #1
SW5	SW1M2	Power to EPSM module master #2
SW6	SW1C	Power to EPSM module controller
SW7*	-----	Spare for future PWB usage

\*The outlines for spare components are shown on the board, but the actual components are not included at this time.

Table 7. Fuses (250 V, Slow)

Fuse	Nomenclature	Amp	Description
FU1	F8A	3.15	In series with FU2 to protect EGPA#1 board and EXTB board
FU2	F8A	3.15	In series with FU1 to protect EGPA#1 board and EXTB board
FU3	F8B	3.15	In series with FU4 to protect EGPA#2 board and EXTB board
FU4	F8B	3.15	In series with FU3 to protect EGPA#2 board and EXTB board
FU5	F8C	3.15	In series with FU6 to protect EGPA#3 board and EXTB board
FU6	F8C	3.15	In series with FU5 to protect EGPA#3 board and EXTB board
FU7	F1M1	8.0	In series with FU8 to protect EPSM module master #1
FU8	F1M1	8.0	In series with FU7 to protect EPSM module master #1
FU9	F1M2	8.0	In series with FU10 to protect EPSM module master #2
FU10	F1M2	8.0	In series with FU9 to protect EPSM module master #2
FU11	F1C	8.0	In series with FU12 to protect EPSM module controller
FU12	F1C	8.0	In series with FU11 to protect EPSM module controller
FU13*	SPARE	3.15	Spare for future PWB usage
FU14*	SPARE	3.15	Spare for future PWB usage

\*The outlines for spare components are shown on the board, but the actual components are not included at this time.

Table 8. Mounting Hole Grounds

Hole	Nomenclature	Description*
E1	CHASGND1	Chassis ground #1
E2	CHASGND	Chassis ground
E3, E4	SFTYGND	Safety ground

\*Chassis ground #1, chassis ground, and safety ground are three separate grounding networks. The chassis ground connections provide a path to ground for currents from the input power filters. The safety ground is used to ground the toggle switch bodies.

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## Renewal/Warranty Replacement

### How to Order a Board

*This information helps ensure that GE can process the order accurately and as soon as possible.*

When ordering a replacement board for a GE exciter, you need to know:

- How to accurately identify the part
- If the part is under warranty
- How to place the order

### Board Identification

A printed wiring board is identified by an alphanumeric **part (catalog) number** located near its edge. Figure 3 explains the structure of the part number.

The board's functional acronym, shown in Figure 3, is normally based on the **board description**, or name. For example, the EPDM module is described as the Exciter Power Distribution Module.

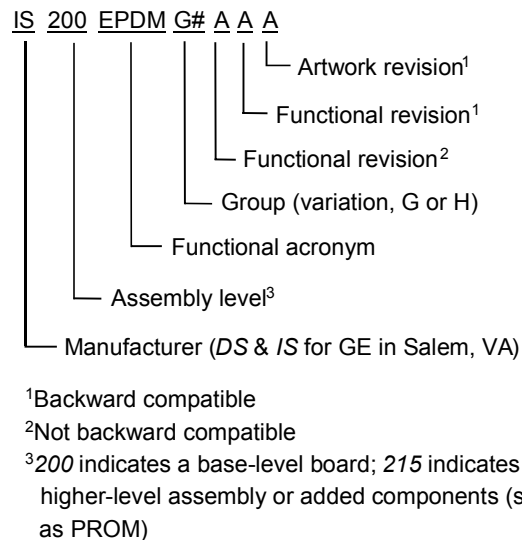


Figure 3. Board Part Number Conventions

### Warranty Terms

The GE *Terms and Conditions* brochure details product warranty information, including **warranty period** and **parts and service coverage**. The brochure is included with customer documentation. It may be obtained separately from the nearest GE Sales Office or authorized GE Sales Representative.