



Exciter Power Backplane IS200EPBPG_

These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met during installation, operation, and maintenance. If further information is desired or if particular problems arise that are not covered sufficiently for the purchaser's purpose, the matter should be referred to GE Industrial Systems.

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Safety Symbol Legend



Warning

Indicates a procedure, practice, condition, or statement that, if not strictly observed, could result in personal injury or death.



Caution

Indicates a procedure or condition that, if not strictly observed, could result in damage to or destruction of equipment.

Note Indicates an essential or important procedure or statement.

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Functional Description

The IS200EPBP power backplane holds three independent power supplies (EPSM) that supply power to the M1, M2, and C controllers. It also holds three ground detection modules (EGDM). EPBP accepts 125 V dc from the adjacent Exciter Power Distribution Module (EPDM), and distributes logic level power from the three power supply modules to the three controllers. Each power supply has an independent ON-OFF switch on the EPDM.

70 V dc and 24 V dc power is distributed from the locking connectors at the top of the backplane to the terminal boards. DIN connectors are used for the EPSM power module interface to the backplane. Refer to the following figure, *EPBP Power Supply Rack*.

Application Data

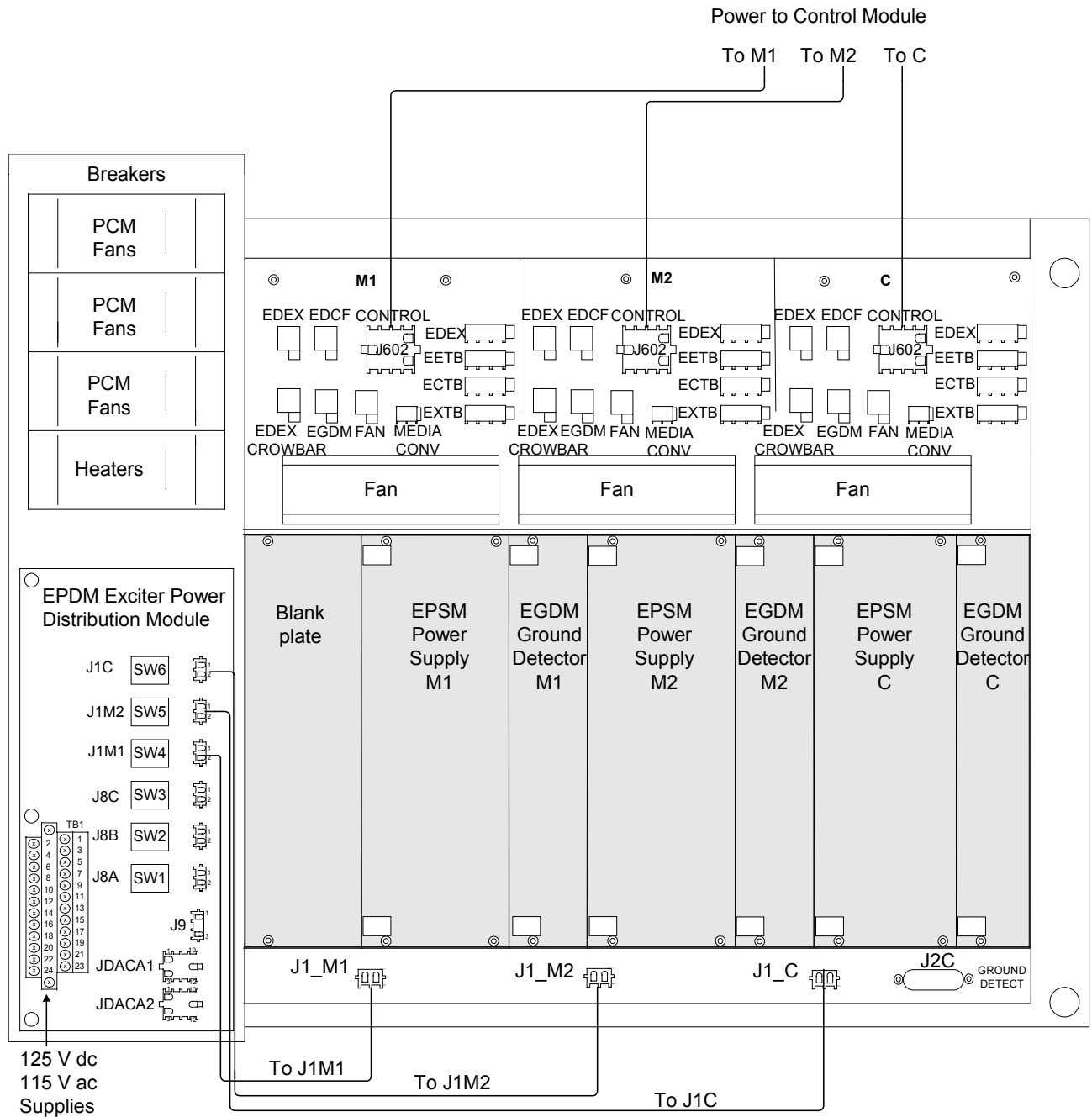
Layout of the EPBP board is shown in the *EPBP Power Backplane figure* on page 5. The P1 and P2 connectors are for the three power supply modules (EPSM) and the three EGDM.

Input Power

The backplane is supplied with 125 V dc power from the EPDM through connectors J1-M1, J1-M2, and J1-C for control sections M1, M2, and C. Two-pin locking connectors are used, refer to the following table.

J1-M1, J1-M2, and J1-C Input Power Connector Descriptions EPBP

Pin Number	Description
1	125 V dc supply from the EPDM
2	125 V dc common return to EPDM



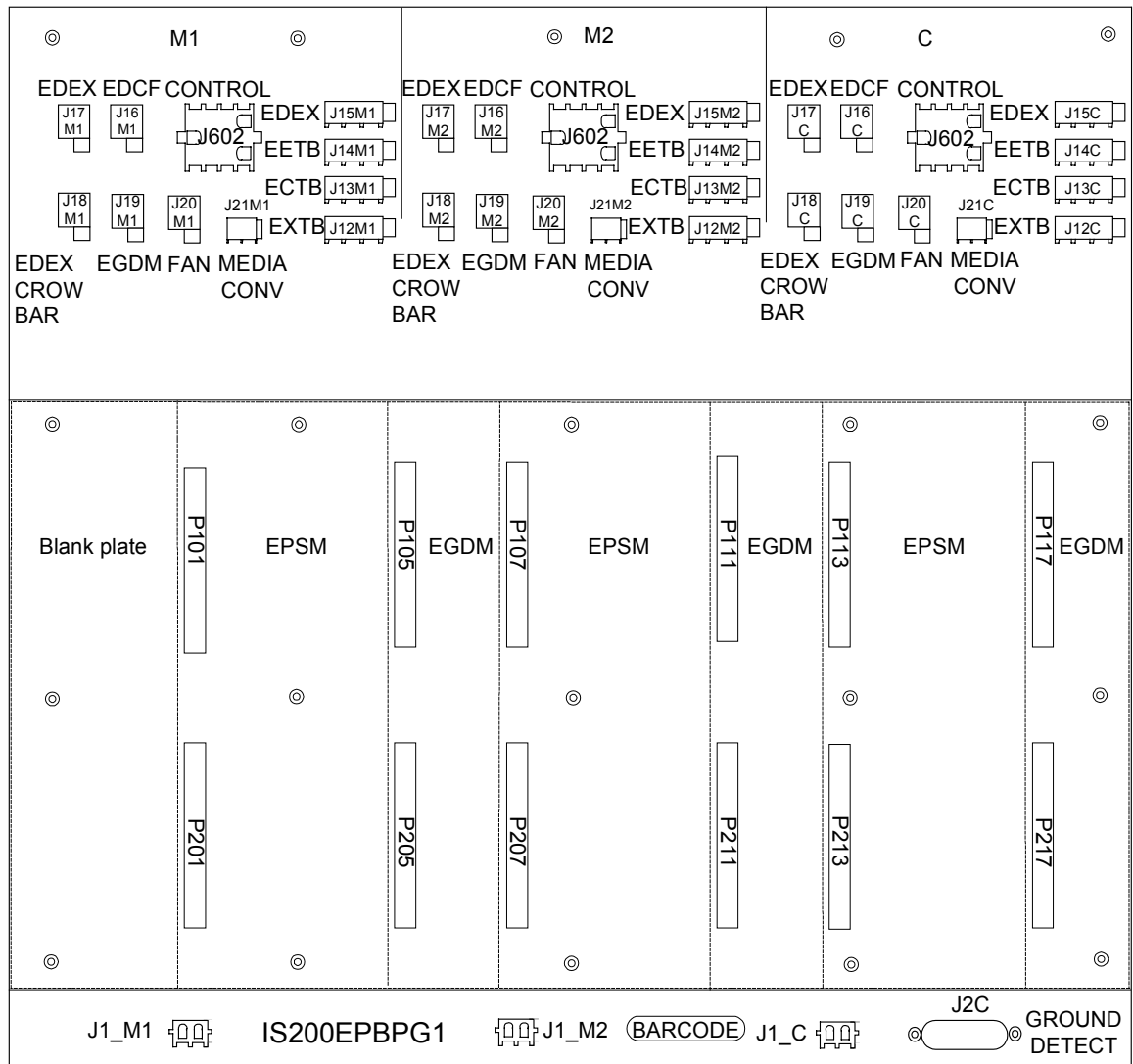
Power Supply Module with EPBP and power modules

Control Power

The control power outputs are locking connectors located at J602, J610, and J612 supplying control sections M1, M2, and C.

J602 Output Power Connector Descriptors

Pin Number	Description
1	Analog Common return
2	24 V dc Power Common
3	24 V dc Power Common
4	-15 V dc supply
5	Digital Common return
6	+24 V dc supply
7	Analog Common return
8	+5 V dc supply
9	+24 V dc supply
10	+15 V dc supply
11	+5 V dc supply
12	Digital Common return



EPBP Power Backplane

P70 Power

The backplane supplies 70 V dc power to the EXT-B, ECT-B, and EDEX terminal boards. There are a total of 12 connectors in sections M1, M2, and C. The three-pin locking connectors are located as follows, refer to the following table, *P70 Power Connector Descriptions EPBP*.

- J12M1, J13M1, J14M1, J15M1
- J12M2, J13M2, J14M2, J15M2
- J12C, J13C, J14C, J15C

P70 Power Connector Descriptions EPBP

Pin Number	Description
1	+70 V dc supply to terminal boards
2	Not connected
3	Isolated Common

P24/N24 Power

The backplane supplies ± 24 V dc power to the EDCF, EDEX, EGDM, and FAN. There are a total of 15 connectors in sections M1, M2, and C. The four-pin locking connectors are located as follows, refer to the following table, *P24/N24 Power Connector Descriptions EPBP*.

- J16M1, J17M1, J18M1, J19M1, J20M1
- J16M2, J17M2, J18M2, J19M2, J20M2
- J16C, J17C, J18C, J19C, J20C

P24/N24 Power Connector Descriptions EPBP

Pin Number	Description
1	+24 V dc supply to control modules
2	Power Common
3	Power Common
4	-24 V dc supply to control modules

Ethernet Media Converter Power

The backplane supplies 5 V dc power through connectors J21M1, J21M2, and J21C from sections M1, M2, and C. Two-pin locking connectors are used, refer to the following table.

J21 Media Converter Power Connector Descriptions EPBP

Pin Number	Description
1	+5 V dc supply to the Media Converter
2	Digital common

Attenuator Module Interface

The three Ground Detector Modules interface with the Attenuator Module (EXAM) over a cable using a 9-pin sub-D connector, J2C described in the table.

J2C EXAM Cable Connector Descriptions EPBP

Pin Number	Description
1	Amplifier input from EGDM-M1
2	Amplifier input from EGDM-M2
3	24 V power to switching relay
4	Attenuator end of sense resistor
5	Not connected
6	Not connected
7	Not connected
8	Switching signal to relay from EGDM-C
9	Amplifier end of sense resistor

Board Replacement

Handling Precautions



Caution

To prevent component damage caused by static electricity, treat all boards with static sensitive handling techniques. Wear a wrist grounding strap when handling boards or components, but only after boards or components have been removed from potentially energized equipment and are at a normally grounded workstation.

Printed wiring boards may contain static-sensitive components. Therefore, GE ships all replacement boards in antistatic bags.

Use the following guidelines when handling boards:

- Store boards in antistatic bags or boxes.
- Use a grounding strap when handling boards or board components (per previous *Caution* criteria).

Replacement Procedures



Warning

To prevent electric shock, turn off power to the panel, then test to verify that no power exists before touching it or any connected circuits.



Caution

To prevent equipment damage, do not remove, insert, or adjust board connections while power is applied to the equipment.

➤ To replace the board

EPBP is mounted in the power supply module with cooling fans. It is recommended that the customer stocks a complete power supply module with EPBP and fans, or just the EPBP board.

Refer to the Installation and Startup Guide, GEH-6631, for complete de-energizing procedures and follow all local practices of lock-out/tag-out.

1. Make sure that the exciter in which the board resides has been de-energized.
2. Open the exciter control cabinet door, test any electrical circuits **before touching them** to ensure that power is off.
3. Verify all cables are labelled with the correct connector name, a marked on the board, to simplify reconnection.
4. Remove all cables from the top part of the backplane, and the ground detector cable at J2C. Remove all the cables and power wiring from the EPDM on the left hand side of the module, except for the PS1M1, PS1M2, and PS1C cables which can be left in place. Disconnect the wiring from the breakers located above the EPDM.

**Warning**

Avoid dropping any mounting hardware into the equipment as this could cause equipment damage or personal injury when power is reapplied.

5. Remove the power supply and ground detector boards from the rack.
6. Remove the rack mounting screws and pull the entire rack out of the cabinet with the EPDM and breakers attached.
7. Disconnect the PS1 cables and remove the EPDM and breaker bracket from the old rack, then attach it to the side of the replacement rack containing a new backplane, and re-attach the PS1 cables. If no replacement rack is available, remove the failed EPBP, replace it with a new one, and reassemble the rack with the EPDM bracket attached. Reattach the PS1 cables.
8. Insert the replacement rack in the cabinet, re-insert the mounting screws, and tighten.
9. Re-insert all the power and ground detect boards in the correct slots and tighten the mounting screws.
10. Re-insert all the cables to the correct connectors on the backplane and EPDM, tighten, and reconnect the EPDM and breaker wiring.
11. Close the exciter control cabinet door.

Renewal/Warranty Information

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

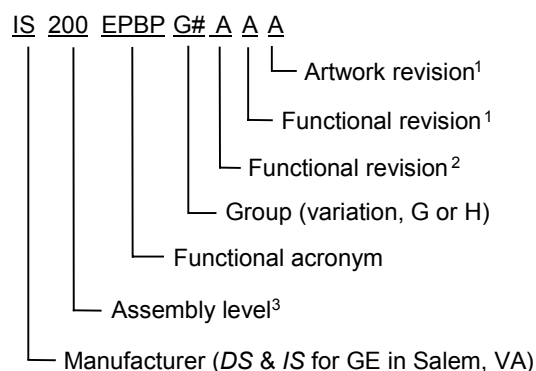
- How to accurately identify the part
- If the part is under warranty
- How to place the order

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

Board Identification

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

The board's functional acronym, shown in the following figure, is normally based on the **board description**, or name. For example, the EPBP board is described as the *Exciter Power Backplane*.



¹Backward compatible

²Not backward compatible

³200 indicates a base-level board; 215 indicates a higher-level assembly or added components (such as PROM)

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.

("+" indicates the international access code required when calling from outside of the USA.)

Placing the Order

Parts still under **warranty** may be obtained directly from the factory:

GE Industrial Systems
Product Service Engineering
1501 Roanoke Blvd.
Salem, VA 24153-6492 USA

Phone: + 1 800 533 5885 (United States)

+ 1 540 378 3280 (International)

Fax: + 1 540 387 8606 (All)

Renewals (spares or those not under warranty) should be ordered by contacting the nearest GE Sales or Service Office. Be sure to include:

- Complete part number and description
- Exciter serial number
- Exciter Material List (ML) number

Note All digits are important when ordering or replacing any board. The factory may substitute later versions of replacement boards based on availability and design enhancements. However, GE Industrial Systems ensures backward compatibility of replacement boards.



GE Industrial Systems

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