



# Series Six Programmable Controllers

GEK-84861B

## Redundant Processor Unit Main Power Supply Module

March 1989

### General Description

The Redundant Processor Unit (RPU) is designed to operate either with a single (Main) power supply module or with two power supply modules, the second being the Auxiliary Power Supply.

The AC Main Power Supply module accepts 115 Vac or 230 Vac and provides regulated +5V and +12 Vdc to the RPU backplane. AC power is connected to terminals on the front panel and routed through a line filter, switch and fuse to a switching power supply.

The DC Main Power Supply module accepts 24 Vdc and provides regulated +5V and +12 Vdc to the RPU backplane. DC power is also connected to terminals on the front panel and routed through a line filter, switch and fuse to a switching power supply.

Terminals on the front panel enable the user to access electromechanical relay contacts for connection to user indicators, or any device to be activated during an alarm condition.

A Light-Emitting Diode (LED), visible through a lens on the front panel, is an indicator of the status of the module. A keyswitch mounted on the front panel is used to select either the RUN or HOLD mode of the RPU. A second keyswitch allows the user to select Central Processor Unit (CPU1), CPU2 or AUTO. A full description of the alarm relay fault conditions as well as the RUN/HOLD switch and CPU1/AUTO/CPU2 switch operation is given in the RPU Manual, GEK-25366. Other features and benefits are listed in Table 1, while Table 2 shows module specifications.

**Table 1. Features and Benefits**

FEATURES	BENEFITS
Input Voltage Requirements: <b>95 - 260 Vac</b> 47-63Hz or 24 Vdc	Compatible with a variety of power sources
Can be utilized along with an Auxiliary Power Supply module	Power Supply system redundancy
Provides access to electromechanical relay contacts	Activates user-supplied fault annunciators
Visible LED monitor	Displays status of output voltages of module

**Table 2. AC - DC Specification**

<b>Input:</b>	AC: 95 - 260 Vac, 250 Va maximum Frequency: 47-63 Hz
<b>Output:</b>	DC: 25Vdc, V maximum Frequency: 47-63 Hz +5 Vdc at 15.5 Amps maximum +12 Vdc at 1.0 Amp maximum
<b>Allowable Power Interruption:</b>	33 ms minimum @ 115 Vac line
<b>Noise Immunity:</b>	Meets requirements of NEMA ICS 2-230 and ANSI C37.90A
<b>Dimensions:</b>	12.46 x 9.00 x 2.75 (inches) 317 x 119 x 70 (mm)
<b>Operating Temperature:</b>	0° to 60°C (outside of rack)
<b>Storage Temperature:</b>	-40°C to 70°C
<b>Humidity:</b>	5% to 95 % (non-condensing)

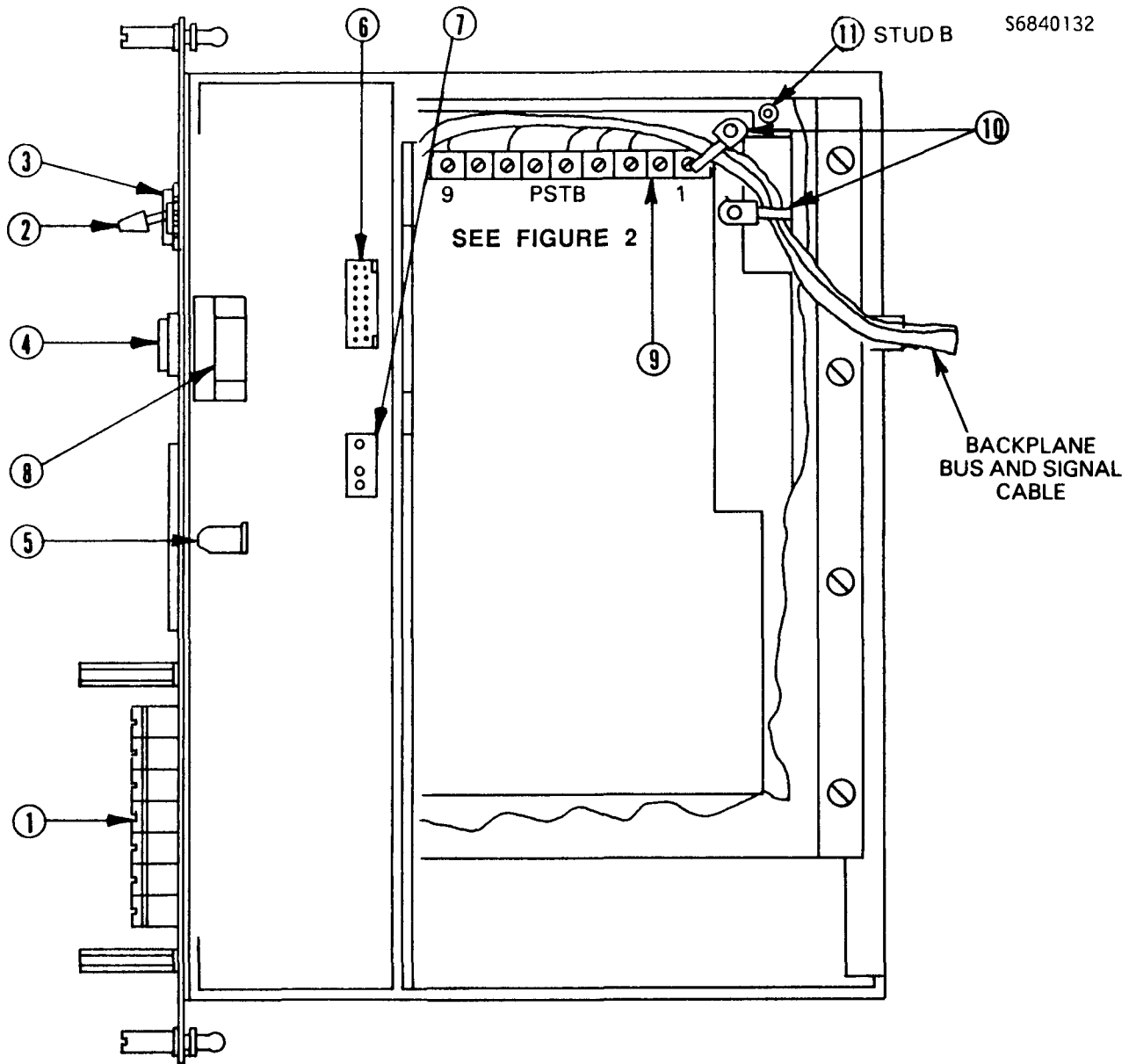


Figure 1. User Items

- |                                |                                |
|--------------------------------|--------------------------------|
| 1. Front Panel Connector Block | 6. P1, 16-Pin Connector        |
| 2. Power Switch                | 7. P6, 3-Pin Connector         |
| 3. RUN/HOLD Keyswitch          | 8. 2A Fuse                     |
| 4. CPU1/CPU2/AUTO Keyswitch    | 9. Power Supply Terminal Board |
| 5. Power-On LED                | 10. Cable Clamp                |
|                                | 11. Chassis Ground Terminal    |

On: The voltage levels of both DC outputs (+12V and +5V) are within tolerance.

Off: At least one of these voltage levels is out of tolerance.

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**Installation**

The RPU is designed to operate either with a single power supply module, or with two power supply modules. The removal and replacement guidelines of a power supply module in a dual supply system also apply to a single supply system.

When two power supply modules are used, the system offers power supply redundancy in such a way that:

- If both supply modules are functioning normally, one module has the load and the other is on standby.
- If one power supply module fails, the other either continues to carry the load or automatically assumes it without affecting the normal operation of the RPU system.
- A power supply module should be able to be removed or installed while the RPU system is up and running without interrupting the normal operation of the RPU system.
- However, because there may be live voltages on a power supply module, even after the switch to that module is turned off, the following removal and replacement guidelines should be observed.

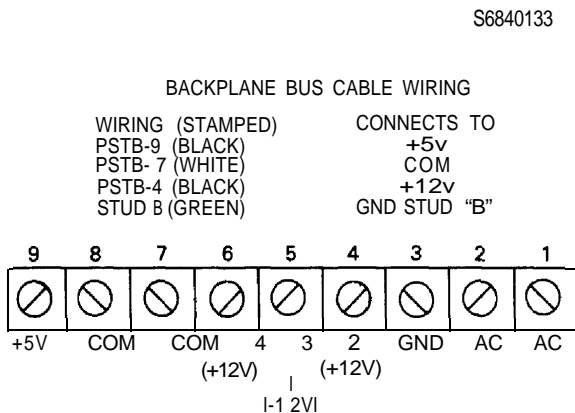
**Power Supply Module Replacement (RPU running)**

1. Switch RUN/HOLD switch to HOLD.
2. Remove power to failed power supply by disconnecting AC source.

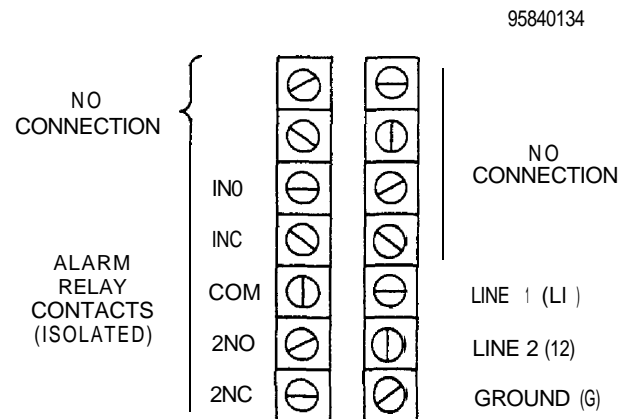
3. Disconnect wiring to AC and alarm terminals.
4. Remove partition faceplate between power supplies.
5. Release quarter-turn fasteners and slide power supply out to expose connectors located behind faceplate.
6. Disconnect the 4 wires from the supply chassis and 2 connectors from the monitor circuit board.
7. Remove the failed power supply.
8. Reverse the above procedure to install the replacement module.
9. After the replacement power module has been installed apply power to module and verify that the POWER-ON LED is on.
10. Switch RUN/HOLD switch to RUN.

**CAUTION**

**Care should be taken to avoid shorting components or leads on the module being replaced. The free-hanging connectors from this module should also be handled or positioned in such a way that they are not brought into contact with conductive surfaces.**



**Figure 2. Power Supply Terminal Block**



**Figure 3. Front Panel Terminal Block**

<b>CAUTION</b>
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The alarm contacts consist of two sets of Form C contacts. The terminals marked 1 NO and 1 NC are associated with Alarm Type No. 1; the terminals marked 2 NO and 2 NC with Alarm Type No. 2. Incorrectly wiring these alarms may cause damage to your equipment (see the RPU Manual, GEK-25366, for further information on Alarm Nos. 1 and 2.)

The user devices connected to each set of alarm terminals on this module should present a resistive load drawing no more than one ampere (1A) of current at no greater than 115 Vac/28 Vdc. Failing to observe this caution may result in damage to the module.

**NOTE**

During normal operation, the alarm relays are energized. During an alarm condition, when the relay becomes de-energized, the contacts marked 1 NO and 2 NO open, and those marked 1 NC and 2NC close.

**NOTE**

The two keystrokes (Run/Hold, Pwr/Auto/CPU2) depend on the Main Power Supply for their circuits. If the Main Power Supply fails, the RPU firmware will behave as though the Run/Hold keyswitch has been switched to Hold, even if an Auxiliary Power Supply is present.

**Table 3. Ordering Information**

DESCRIPTION	CATALOG NUMBER
95-260Vac Main Power Supply	IC600PM507
24 Vdc Main Power Supply	IC600PM543

The UL symbol on the nameplate means the product is listed by Underwriters Laboratories Inc. (UL Standard No. 508, Industrial Control Equipment, subsection Electronic Power Conversion Equipment.)

For further information, contact your local GE Fanuc sales representative.