



# SERIES SIX

## PROGRAMMABLE CONTROLLERS

### 24 VDC INPUT CPU/DPU POWER SUPPLY MODULE

GEK-9076 1

Source Voltage  
20 to 32 VDC  
Output Voltage  
35, +12, -12 VDC

#### GENERAL DESCRIPTION

The 24 VDC Input CPU/DPU Power Supply Module, utilized in both the Central Processor Unit (CPU) and the Data Processor Unit (DPU), is available to be used with a power source from 20 to 32 Vdc. The features and benefits of this module are summarized in Table 1.

The 24 VDC Input CPU/DPU Power Supply Module provides regulated +12, -12 and +5VDC voltages to the rack backplane. The input (or source voltage) is applied to terminals on the front panel, then routed through a switch and fuse to a switching power supply. For a given load the input power drain remains essentially constant. The power supply is protected against polarity reversal of the DC Input.

The module provides electromechanical relay contacts for connection to user indicators, or any device to be activated during an alarm condition. The module also provides a

voltage regulator for an optional, auxiliary battery that provides battery back-up of Complementary Metal-Oxide Semiconductor (CMOS) memory contained in the processor rack.

A Keyswitch mounted on the front panel is used to select either the RUN or the STOP mode for the processor; a second Keyswitch allows the user to protect the contents of the processor memories by placing them in a READ ONLY mode. The same key operates both Keyswitches. Refer to Figure I (next page) for the CPU/DPU Power Supply module specifications.

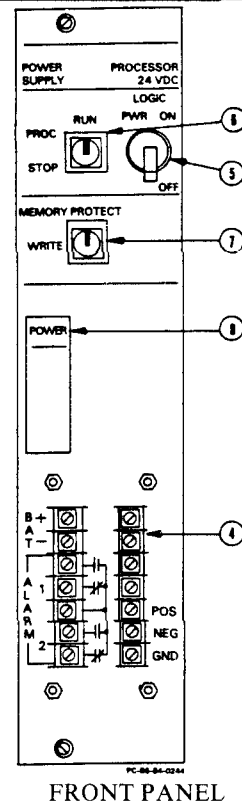
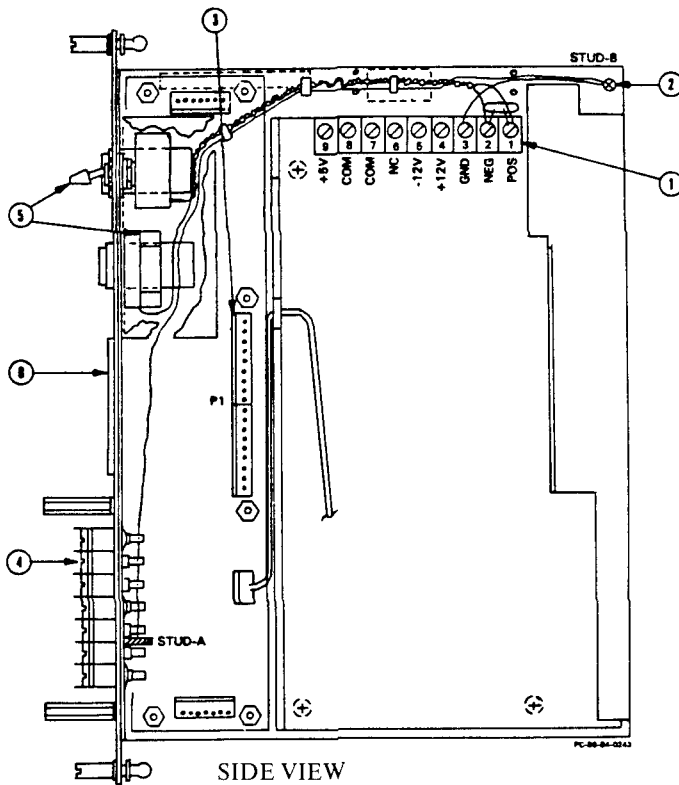
The 24 VDC Input CPU/DPU Power Supply Module may be used in place of a 115/230 VAC Input CPU/DPU Power Supply Module in an existing rack if 24 VDC input is desired.

TABLE 1. FEATURES AND BENEFITS

FEATURES	BENEFITS
Utilizes DC input power source.	Extends power source compatibility to 24 VDC systems.
Can be utilized in CPU and DPU racks.	Reduced spare-parts inventory.
Provides electromechanical-relay contacts for alarm indications.	Activates user-supplied power indicators.
Contains voltage regulator for auxiliary battery.	External battery back-up of CMOS memory.

FIGURE 1. SPECIFICATIONS

- Input: 20-32 Vac, 180 VA max.
- Output:
  - +5 Vdc, 16.5 A max.
  - +12 Vdc, 1.5 A max.
  - 12 Vdc, 1.0 A max.
 Total power from all outputs must be less than 90 watts.
- Allowable Power Interruptions: 10ms minimum at 20 VDC line.
- Noise Immunity: Meets requirements of NEMA ICS 2-230 and ANSI C37.90A.
- Altitude: Up to 10,000 feet (3,000 meters) above sea level.
- Auxiliary Battery Input: 8-28 Vdc
- Dimensions: 12.46 x 9.00 x 2.75 (inches)  
317 x 229 x 70 (mm)
- Operating Temperature: 0° to 60°C (outside of the rack)
- Storage Temperature: -20°C to +80°C
- Humidity: 5%-95% (non-condensing)



- ① Internal Terminal Strip (Refer to Figure 3)
- ② Chassis Ground Terminal
- ③ 18-Pin Connector: Connects signal cable from rack backplane
- ④ Front-Panel Connector Block (Refer to Figure 4)
- ⑤ Power Switch/Fuse

- ⑥ CPU RUN/STOP Key Switch
- ⑦ MEMORY PROTECT Key Switch
- ⑧ POWER Light

On: The voltage levels of all three DC outputs (+12V, -12V, +5V) are within tolerance

Off: At least one of these voltage levels is too low

FIGURE 2. USER ITEMS

### INSTALLATION

These steps define the procedures to be followed when a power supply is to be replaced on a Series Six CPU or DPU rack. The tools needed are a regular screwdriver, Phillips screwdriver, and a 5/16" wrench or nut driver.

1. Stop the system by switching the top key on the CPU to "STOP".
2. Switch off all units in the system, including the user's power supplies.
3. Remove all power from the system, preferably at the source (i.e. throw the main circuit breaker for the system).
4. Locate the power supply to be changed. The power supply is in the far right side of the CPU/DPU rack.
5. Remove the plastic cover on the lower portion of the power supply to be replaced and, using a volt-meter, make sure there is no DC power present.
6. Take note of the location and color of the DC wires and then remove them. Also, remove Auxiliary battery and/or Alarm connection(s) noting location, color, and polarity for correct replacement.
7. At the top and bottom of the power supply, there are 1/4-turn thumbscrews. To loosen, turn the thumbscrews approximately 1/4 turn counterclockwise.
8. Grasp the thumbscrews and gently pull outward. Be careful not to damage the internal wiring while pulling the supply out.
9. Locate the wires that extend from the back of the rack to the terminal on the power supply. These wires should be labeled or stamped with their location; the circuit boards have wire locations stamped on them also. (Refer to Table 3.) Remove these wires. There is also a plastic wire clamp holding these wires in place. Detach this from the frame if there is not a similar item on the replacement power supply, or cut the clamp if there is one on the new supply.

Remove the 18-pin (PI) moLex connector that is on the narrow board in the front part of the power supply. The power supply should now be completely detached from the rack.

10. Take the replacement power supply and attach the wires as shown in Figure 3. Be sure to connect the 18-pin moLex connector (P 1) to the power supply.

Attach the wire clamp on the upper stud of the power supply frame, or if there is a clamp already there, wrap the wires in it.

11. Slide the power supply into the rack, being careful not to damage the wires. When the power supply is all the way in, turn the thumbscrews clockwise until they lock in.
12. Remove the plastic cover on the lower portion of the power supply and attach the DC wire, as well as the battery and alarm wires, as they were on the original supply (Refer to Step 6 and Figure 4). Replace the plastic cover.
13. Verify that the DC input lines are of the correct polarity before applying power. An inadvertant reversal of input polarity will cause the supply to draw excessive currents and may blow the internal fuse (8A slo-blo) which must then be replaced before proper operation can be resumed.
14. Restore system power. Turn on the CPU/DPU unit. Check to see if the POWER light is on. If it is, turn on the rest of the system and resume normal operation.
15. If the POWER light does not come on, the power supply may be bad, source voltage may not be turned on, or there may be other problems within the rack. Please call the Programmable Control Service Center EMERGENCY SERVICE NUMBER (804) 978-5747 for assistance.

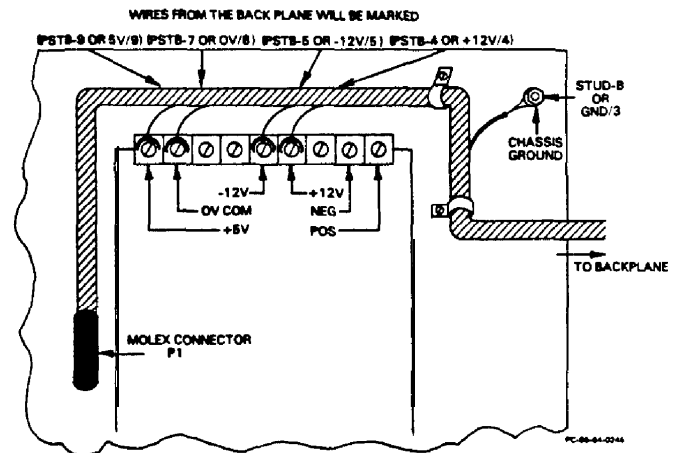


FIGURE 3.  
POWER SUPPLY EXTERNAL WIRING DIAGRAM

**CAUTION**

If a memory auxiliary battery is used, the circuit connecting it to this module should be isolated from the rest of the system. If this CAUTION is not observed, the battery could be short-circuited.

The alarm contacts consist of two sets of normally-opened and normally-closed 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. (Refer to Installation and Maintenance Manual, GEK-25361, for further information on Alarm Nos. 1 and 2.)

**CAUTION**

The user devices connected to each set of Alarm terminals on this module should present a resistive load drawing no more than one amp of current at no greater than 115 Vac/28 Vdc. Failure to observe this CAUTION may result in damage to the circuit board.

**NOTE**

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

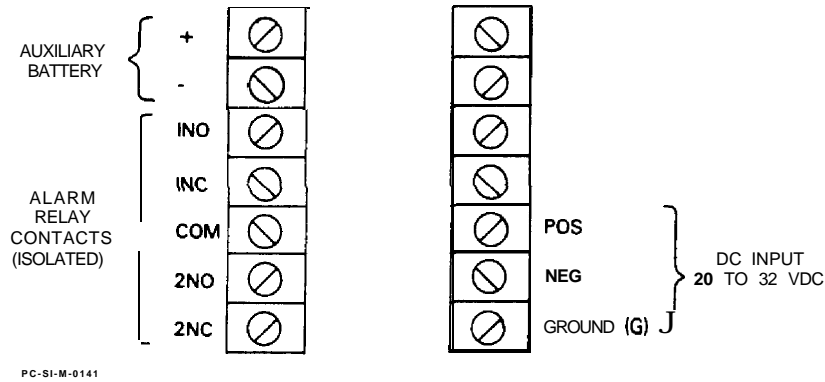


FIGURE 4. FRONT-PANEL TERMINAL BLOCK

**ORDERING INFORMATION**

Module	Part Number
24 VDC Input CPU/DPU Power Supply Module	IC600PM541A

**CATALOG NUMBER REVISION SUFFIX**

The equipment listed above having the catalog numbers shown and the same equipment having a higher alpha suffix is designed for listing by UL for use as auxiliary control devices.



This 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 office.

**GE Fanuc Automation North America, Inc, Charlottesville, Virginia**