

Programmable Controller

IC697PWR710/712

GFK-0083L
November 1995

**Power Supply Module, 55W
120/240 VAC, 125 VDC**

Features

- Operation from 120/240 VAC or 125 VDC
- Five volt DC output up to 11 amps
- Slide-in rack mount construction
- Electronic short circuit overcurrent protection provided on 5 volt bus
- Two rack operation from a single power supply
- Power factor corrected on AC inputs

Functions

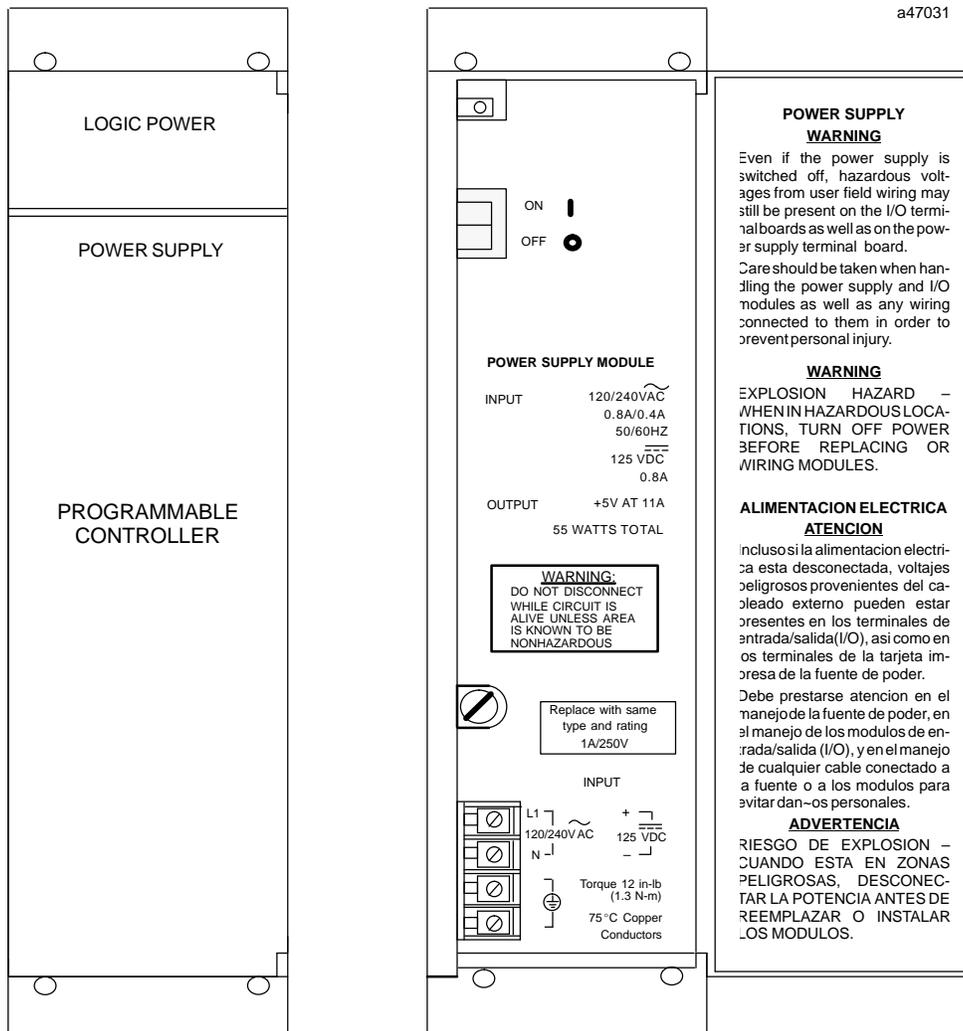
This **Power Supply Module** for the programmable controller is a rack-mounted unit that plugs directly

into a 48-pin backplane-mounted connector in the leftmost slot in the rack. It provides +5 volt power and logic level sequencing signals to the backplane.

This power supply may be used either in a single rack application, or may also be used to provide power to a second rack if the total load is within the supply rating. Interconnection to the second rack is through an available prewired cable (see the ordering instructions on the last page of this data sheet).

The power supply output will ride through a one-cycle total loss of input power at full load. Protection is provided for overcurrent and overvoltage fault conditions.

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Operation of the Power Supply

This Power Supply Module can operate from either a 120 VAC or 240 VAC nominal line. For these two ranges, the power supply can accept an input voltage range of from 90 to 264 VAC, 47 to 63 Hz. Active power factor correction circuits in this supply maintain a unity power factor which eliminates the need for oversized circuit breakers and wiring.

This power supply will also operate with a 125 VDC nominal line. It will accept a DC input voltage range of 100 to 150 VDC.

Overvoltage Protection

The power supply includes an electronic overvoltage protection circuit. This circuit will clamp the output if the 5 volt bus exceeds 6.2 volts. External overvoltage on the output will not cause the power supply fuse to open. However, if an internal fault in the power supply caused the overvoltage condition, the fuse may open. Replace this fuse with a 1 amp, 250 volt 5x20 mm fuse.

Overcurrent Protection

The power supply provides an electronic overcurrent limit at 12 amperes, typical. If the maximum current rating is exceeded, the output voltage will drop.

It will remain in that state until the load is either removed or reduced. A current overload (including a short circuit condition) will not cause the fuse to open.

Dual Rack Operation

A single power supply can provide power for two racks under the following conditions:

- Only 5 volt power is required in the second rack, and the total power required by both racks is within the capability of the supply.
- The current drawn by the second rack is less than 5.2 amperes.
- The two racks must be mounted in close proximity as limited by the 3-foot connecting cable.

The connecting cable used for dual rack operation is listed in the ordering instructions. This cable carries the +5 volt power bus as well as the power sequenc-

ing signals. It uses a 9-pin D-type connector which connects directly to the backplane through an opening in the rack frame. Note that the cable carries power and power sequencing signals only. Inter-rack communication and bus interface modules must be provided separately. See the applicable *Programmable Controller Installation Manual* for application information.

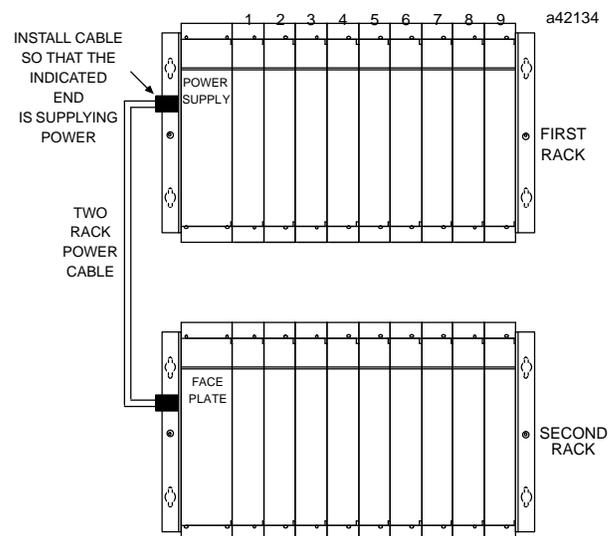


Figure 5. Dual Rack Configuration

Timing Diagram

The timing diagram below shows the relationship of the AC input power to the 5 volt DC output and to the two system signals generated by the power supply: *ACFAIL* and *SYSRESET*

On application of power, the *ACFAIL* signal goes false soon after the 5 volt bus is within specification. The system is held in the Reset state by *SYSRESET* for at least 200 milliseconds after 5 volt power is available. (During this time, outputs are forced off).

If AC input power is interrupted, the 5 volt bus will remain within specifications for at least one cycle. The system is then given an additional 5 ms to complete an orderly shutdown before *SYSRESET* stops all processing.

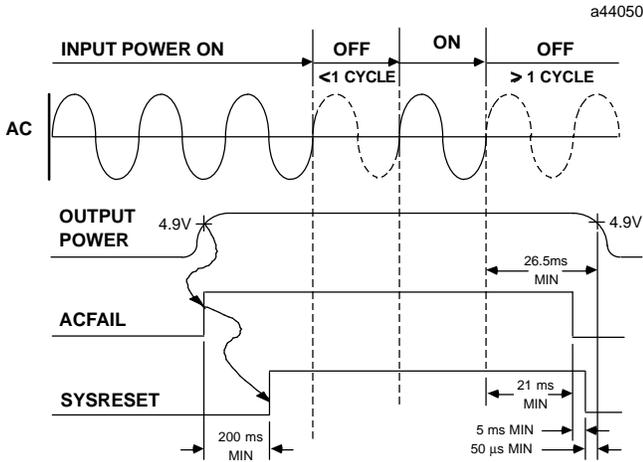


Figure 6. Timing Diagram for Versions D and Later

Note

Input power interruptions which exceed the power supply ride through time (21 milliseconds minimum) will result in a complete power down/power up cycle of *ACFAIL* and *SYSRESET*.

Mounting

The Power Supply is a plug-in module that is installed in the leftmost slot of any standard IC697 rack or VME Integrator’s rack.

Power Supply Door

The power supply door can easily be opened by grasping the upper left corner of the door with your right thumb or a fingernail and gently pulling the door towards you. Use care when opening the door since pulling from the bottom can cause the hinge or the door to break.

Input Voltage and Grounding

The power input terminal board provides two terminals for 120/240 VAC or 125 VDC input power

connections and two additional terminals for ground connections. Power input connections should be made with copper AWG #16 (1.3 mm²) wire rated for 75 °C (167 °F).

Each terminal can accept solid or stranded wires, but the wires into any given terminal should be the same type and size.

It is recommended that the GND terminal on the power supply be connected to the GND terminal on the rack and to earth using copper AWG #12 (3.3 mm²) wire rated for 75 °C (167 °F) to ensure adequate grounding.

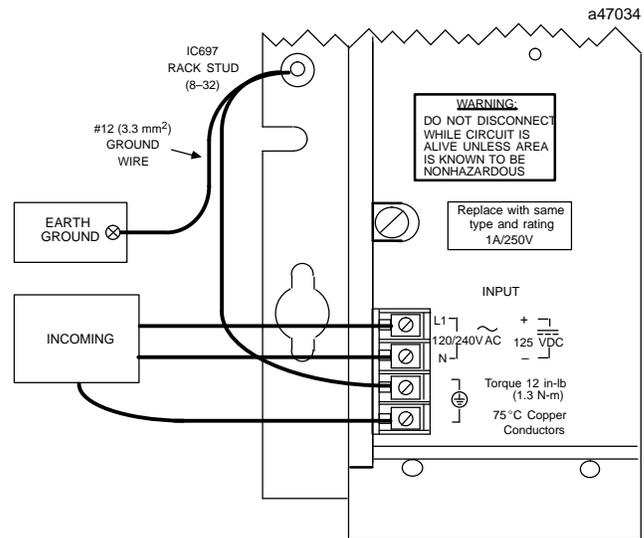


Figure 7. Terminal Board Connections for Versions D and Later

System Noise Immunity

Two easy steps must be taken to properly ground the programmable controller system to reduce the possibility of errors due to electrical noise.

1. A Ground terminal on the power supply must be connected to the GND terminal on either side of the rack using AWG #12 (3.3 mm²) wire.
2. The GND terminal on the rack must be connected to a good earth ground.

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Table 3. Specifications for IC697PWR710/712 (Versions D and Later) †

Nominal Rated Voltage:	120/240VAC or 125 VDC
Input Voltage Range: AC DC	90 to 264 VAC, 47 to 63 Hz 100 to 150 VDC,
Input Power: Input Half Cycle Peak Inrush: Power Factor	90 watts maximum at full load 3 amps (typical) > .95
Output Power: Output Voltage:	56 watts maximum +5 VDC: 4.90 to 5.25 volts (5.1 volts nominal)
Protective Limits - Overvoltage Limit: Overcurrent Limit:	6.2 volts (typical), <i>electronic overvoltage protection</i> 12 amps (typical), <i>electronic current limit</i>
Ride Through Time:	21 milliseconds minimum (from loss of AC input)
VME	System designed to support the VME standard C.1

† Refer to data sheet GFK-0867B, or later for product standards and general specifications.

Table 4. Ordering Information

Description	Catalog Number
Power Supply - 120/240 Volts AC, 55 Watts	IC697PWR710 IC697PWR712
Power Supply Extension Cable (includes cable and faceplate for vacant power supply slot in second rack)	IC697CBL700 IC697CBL713