MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE PACSYSTEMS RX3I

IC694PWR331D

24 V DC HIGH-CAPACITY POWER SUPPLY

Used with the applicable PACSystems RX3i power supplies configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: IC694PWR331D.pdf

In systems with a floating neutral input (Figure 83 - the neutral line is not referenced to Protective Earth Ground), this jumper must NOT be installed. In a floating neutral system, voltage surge protection devices such as MOVs **must** be installed from L1 to earth ground, and from L2 (Neutral) to earth ground, as discussed in *Special Instructions for Floating Neutral Systems*, Section 4.3.1.

4.10 Power Supply, 24Vdc High-Capacity: IC694PWR331

High Capacity Power Supply IC694 PWR331 is rated for 30 W output. For applications requiring greater +5Vdc current capacity than is available with a standard supply (PWR321), a High-Capacity Power Supply allows all 30 W to be consumed from the +5Vdc supply. This supply can operate from an input voltage source in the range of 12Vdc to 30 Vdc. Although it is capable of maintaining all outputs within specifications with input voltages as low as 12Vdc, it requires an initial input voltage of 18Vdc to start up.

PWR331 Power supplies provide the following outputs:

- +5Vdc output
- Relay +24Vdc, which provides power to circuits on Output Relay modules
- Isolated +24Vdc, which is used internally by some modules, can also be used to provide external power for 24Vdc Input modules

Power Supply IC694PWR331 must be installed in an Expansion backplane in an RX3i system. The battery backup and serial port functions are not available in Expansion Backplanes.

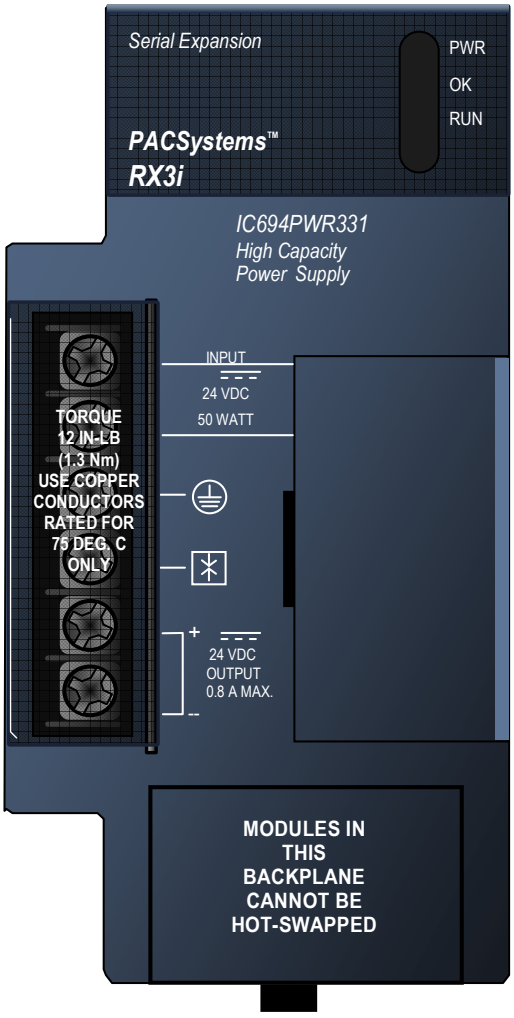

Figure 113: IC694PWR331

4.10.1.1 LEDs

The green PWR LED shows the operating state of the Power Supply. PWR is ON when the power supply has a correct source of power and is operating properly. It is OFF when a power supply fault occurs or power is not applied.

The green OK LED is steady ON if the PLC is operating properly. It is OFF if a problem is detected by the PLC.

The green RUN LED is ON when the PLC is in Run mode.

4.10.2 Specifications: PWR331

18 to 30 Vdc
12 to 30 Vdc

Nominal Rated Voltage Input Voltage Range Start Run	24 Vdc
Input Power Inrush Current[16]	50 W maximum at full load 4 A peak, 100 ms, maximum
Output Power	5 Vdc: 30 W maximum (De-rate per Figure 114) 24 Vdc Relay: 15 W maximum 24 Vdc Isolated: 20 W maximum *NOTE: 30 W maximum total (all three outputs)*
Output Voltage	5 Vdc: 5.0 to 5.2 Vdc (5.1 Vdc nominal) 24 Vdc Relay: 19.2 to 28.8 Vdc 24 Vdc Isolated: 19.2 to 28.8 Vdc
Isolation (input to backplane)	1500 Vac (for 1 minute)
Protective Limits Over-voltage: Over-current;	 5 Vdc output: 6.4 to 7 Vdc 5 Vdc output: 7 A maximum
Ride-through Time:	10 ms minimum. This is the length of time the power supply maintains valid outputs if the power source is interrupted
Fuse	5 A, GE part number 44A724627-114. Refer to *Module Fuse List*, Section 2.6.4.11.

4.10.2.1 Thermal Derating: PWR331

[16] The Inrush Current specification is given as a guide for sizing the external power source for the IC695PWR331. Peak inrush current may be higher for shorter durations.

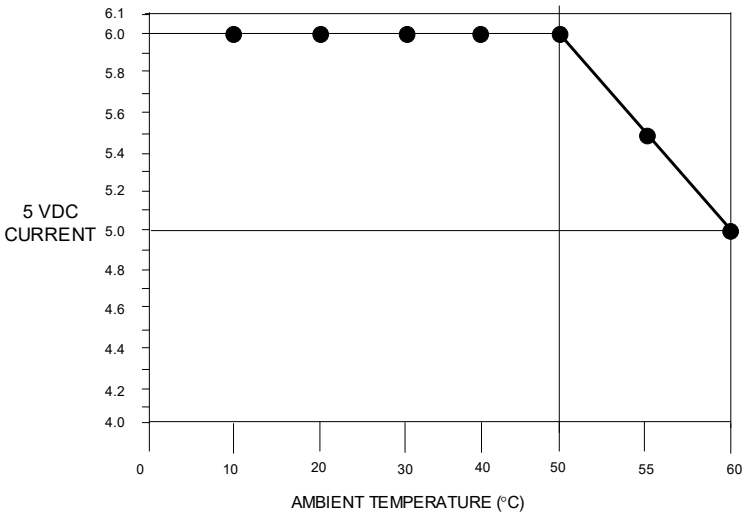

Figure 114: Thermal Derating Curve for 5Vdc Output PWR331

4.10.2.2 Over-Current Protection: PWR331

The 5 Vdc output is electronically limited to 7 A. If an overload (including short circuits) occurs, it is sensed internally and the power supply shuts down. The power supply continually tries to restart until the overload condition is removed. An internal replaceable fuse in the input line is provided as a backup. The power supply usually shuts down before the fuse blows. The fuse also protects against internal supply faults.

4.10.2.3 Calculating Input Power Requirements: PWR331

Use the following procedure to determine input power requirements for the 24Vdc High Capacity Power Supply:

- Determine total output power load from typical specifications listed for individual modules in this chapter
- Multiply the output power by 1.5 to determine the input power value
- Divide the input power value by the operating source voltage to determine the input current requirements
- Use the lowest input voltage to determine the maximum input current
- Allow for start-up surge current requirements
- Allow margins (10% to 20%) for variations

4.10.3 Field Wiring: PWR331

The + wire connects to the top terminal screw, and the - wire connects to the second. These connections are polarity-sensitive for PWR331. Ground connects to the third screw.