IC693PWR331 High Capacity Power Supply, 24 VDC Input

The Series 90-30 DC input High Capacity power supply (IC693PWR331) is a 30 watt wide range supply designed for 24 VDC nominal inputs. *For applications requiring greater +5V current capacity than is available with the standard supply, this supply allows all 30 watts to be consumed from the +5 V output.* It will accept an input voltage range from 12 VDC to 30 VDC. Although it is capable of maintaining all outputs within specifications with input voltages as low as 12 VDC, it will not start with initial input voltages of less than 18 VDC. This power supply provides the following outputs:

- +5 VDC output.
- +24 VDC Relay power output which provides power to circuits on Series 90-30 Output Relay modules.
- Isolated +24 VDC, which is used internally by some modules, can also be used to provide external power for 24 VDC Input modules.

The load capacity for each output of this power supply is shown in the following table.

Table 4-10. IC693PWR331 Power Supply Capacities

Catalog Number	Load Capacity	Input	Output Capacities (Voltage/Power *)		
IC693PWR331	30 Watts	12 to 30 VDC	+5 VDC 30 watts	+24 VDC Isolated 20 watts	+24 VDC Relay 15 watts

* Total of all outputs combined cannot exceed 30 watts.

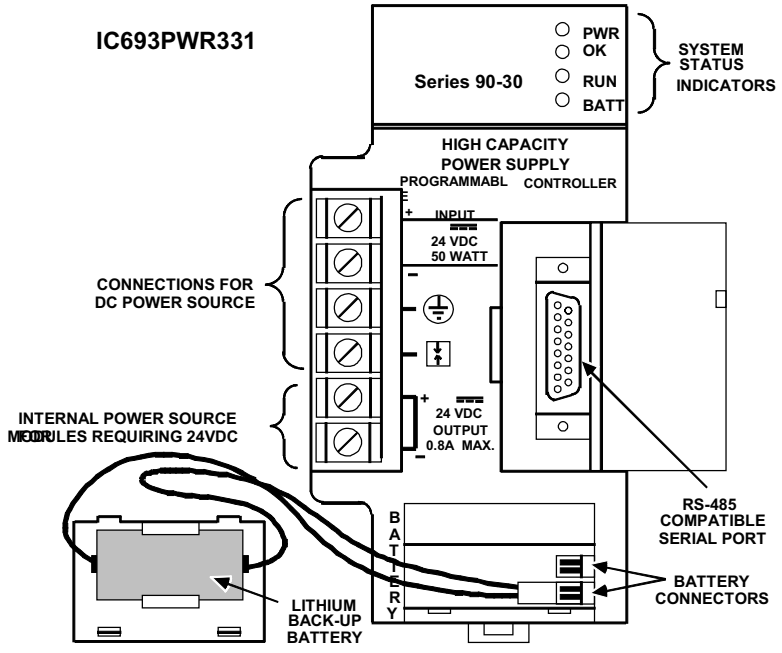

Figure 4-8. Series 90-30 24 VDC Input High Capacity Power Supply - IC693PWR331

Table 4-11. Specifications for IC693PWR331 Power Supply

Nominal Rated Voltage **Input Voltage Range** **Start** **Run**	24 VDC 18 to 30 VDC 12 to 30 VDC
Input Power **Inrush Current**	50 watts maximum at full load *
Output Power	5 VDC: 30 watts maximum ** 24 VDC Relay: 15 watts maximum 24 VDC Isolated: 20 watts maximum *NOTE: 30 watts maximum total (all three outputs)*
Output Voltage	5 VDC: 5.0 VDC to 5.2 VDC (5.1 VDC nominal) 24 VDC Relay: 19.2 to 28.8 VDC 24 VDC Isolated: 19.2 VDC to 28.8 VDC
Protective Limits **Overvoltage:** **Overcurrent;**	 5 VDC output: 6.4 to 7 V 5 VDC output: 7 A maximum
Holdup Time:	10 ms minimum
Standards	Refer to data sheet, GFK-0867B, or later version for product standards, and general specifications.

* Dependent on installation and power supply impedance characteristics.

** Derate per Figure 2-22 at ambient temperatures above 50°C (122°F).

Current Derating for Higher Temperatures

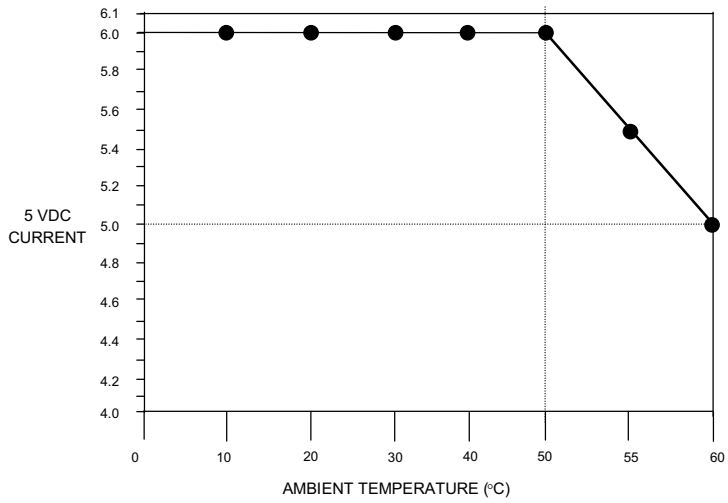

Figure 4-9. 5 VDC Current Output Derating for Temperatures above 50°C (122°F)

Calculating Input Power Requirements for IC693PWR331

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

- Determine total output power load from typical specifications listed for individual modules at the end of 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

Field Wiring Connections to the DC Input-Only Power Supplies

DC Power Source Connections

The + and - wires from the DC power source connect to the top two terminals on the terminal strip. The + wire should be connected to the top terminal screw, and the - wire to the second screw (counting from the top down). The ground connection connects to the third screw. This connection scheme is clearly marked on the front of these power supplies.

Isolated 24 VDC Supply Output Connections

The bottom two terminals of the power supply terminal strip provide connections to the Isolated +24 volt DC output which can be used to provide power for external circuits (within power limitations of the supply).

Caution

If the Isolated 24 VDC supply is overloaded or shorted, the Programmable Logic Controller will stop operation.