



Allen-Bradley Power Supply Modules

(Cat. No. 1771-P4S, -P6S, -P4S1, -P6S1)

Product Data



A new generation of slot power supplies from Allen-Bradley designed for use in global ac voltage applications.

Provides 8A in a single slot. Each of these one-slot power-supply modules provides 8A maximum of output current for an I/O chassis back-plane.

Offers a supply for each of 4 global ac voltage sources. You can choose from the following nominal input voltages:

- 120V ac for the 1771-P4S power supply
- 220V ac for the 1771-P6S power supply
- 100V ac for the 1771-P4S1 power supply
- 200V ac for the 1 771 -P6S1 power supply

AB PLCs

Benefits

All four power-supply modules have these benefits:

High density of power. Each power-supply module mounts into a single I/O-chassis slot and provides 8A output current (max). This allows an additional I/O module in the chassis (compared to an earlier 8A power-supply module that uses 2 I/O-chassis slots).

High total power. These power supplies can provide a total of 16A output current (max) by connecting power supply outputs in parallel.

Convenient power on/off switching. Power On/Off toggle switch provides convenient means for you to switch power on or off during start-up or trouble-shooting.

Quick connection and replacement. Quick-disconnect terminal block saves time by allowing you to replace the power supply without disconnecting wires from terminals or using tools. Quick no-lug wiring terminals provide connection for solid or stranded copper conductors.

Constant wire-clamping force. Spring-clip terminals provide constant clamping force for reliable wire retention, especially under shock or vibration.

Circuit protection. Allen-Bradley power supplies guard against circuit damage on the supply or other modules in the chassis by monitoring its dc output for over-voltage and over-current conditions.

Data-integrity assurance. Allen-Bradley power supplies guard against loss of data integrity by monitoring its ac input and dc output for under-voltage conditions.

Compatibility

You can connect 2 power supplies in parallel to provide back-plane current equal to the sum of the outputs of the two supplies. You can connect in parallel 2 identical power supplies. Alternatively, you can connect a 1771-P4S or 1771-P6S supply with another supply with the same input voltage level. The other supply could be a power-supply module or an in-chassis processor with an integral power supply. These products are listed in the following compatibility table.

These power supplies are completely compatible with the 1771-PSC power-supply chassis and the 1771-A1B, -A2B, -A3B, -A4B I/O chassis. They are also compatible with the superseded 1771-A1, -A2 and -A4 chassis with placement restrictions. Compatibility restrictions on power supplies, adapters, or processors in the chassis are noted in the following table.

Power Supply Compatibility

Product cat. no.	Compatible with 1771-P4S	Compatible with 1771-P6S	Compatible with 1771-PaS1. -P6S1
1771-AL	yes	yes	yes
1771-AR	yes ¹	yes ¹	yes ¹
1771-AS	yes ²	yes ²	yes ²
1771-ASB Series A,B	yes	yes	yes
1771-P3	yes ³	no	no
1771-P4	yes ³	no	no
1772-LN1, -LN2, -LN3	no	no	no
1772-LV	no	no	no
1772-LS	yes	yes	yes
1772-LSP	yes ³	no	no
1772-LW	yes	yes	yes
1772-LWP	yes ³	yes ³	no
1772-LX	yes	yes	yes
1772-LXP	yes ³	yes ³	no
1772-LZ	yes	yes	yes
1772-LZP	yes ³	yes ³	no
1785-LT Series A, B	yes	yes	yes
1785-LT2	yes	yes	yes
1785-LT3	yes	yes	yes

¹Switch 7 or the I/O chassis back-plane must be on.

²Compatible only in 1771-A1B, -A2B, -A3B, -A4B I/O chassis.

³Power supplies paralleled.

Related Publications

Installation Data (publication 1771-2.135) is shipped with each power supply to tell you how to install and trouble-shoot these power supplies.

Industry Standards

These power supplies are designed to meet standards of the following agencies:

- UL, CSA (Safety, Dielectric Withstand)
- DOD (Electrostatic Discharge)
- NEMA (Noise Susceptibility)
- IEEE, ANSI (Surge Transient Susceptibility)
- MIL-STD (Conducted Electromagnetic Susceptibility, Temperature, Humidity)
- ASTM, UL (Flammability, Resistance to Ignition)
- Allen-Bradley (Shock, Vibration)

AB PLCS

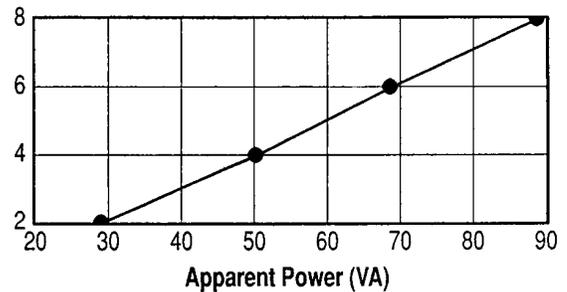
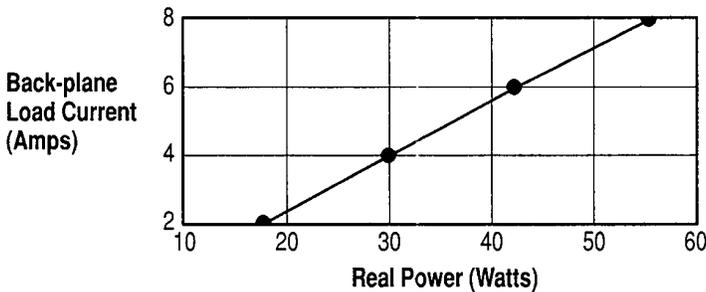
Under-voltage Shutdown

Each power supply generates a shut-down signal on the back-plane whenever the ac line voltage drops below its lower voltage limit, and removes the shut-down signal when the line voltage comes back up to the lower voltage limit. This shut-down is necessary to ensure that only valid data is stored in memory.

Because converting ac to dc draws power only from the peak of the ac voltage wave-form, the external transformer rating (in VA) of each power supply is greater than either its real power dissipation (in Watts) or its apparent power requirements (in VA). If the transformer is too small, it clips the peak of the sine wave; when the voltage is still above the lower voltage limit, the power supply will sense this clipped wave form as low voltage and prematurely shut down the adapter or in-chassis controller processor.

Determining Cooling Requirements, Power Cost, and Transformer Size

To help determine your cooling requirements and power cost respectively, use the graphs below for real-power dissipation and apparent-power consumption respectively. If the transformer manufacturer has a recommended multiplier for sizing a transformer for an ac-to-dc power supply, use it. Otherwise, to determine the minimum recommended rating for the external transformer, multiply the apparent power by 2. We measured the real power, apparent power, and voltage sine-wave distortion for a range of backplane current loads.



Specifications

	1771-P4S	1771-P6S	1771-P4S1	1771-P6S1
Input Voltage	120V ac	220V ac	100V ac	200V ac
Input Range	97-132V ac rms	194-264V ac rms	85-120V ac rms	170-240V ac rms
Frequency	47-63 Hz	47 – 63 Hz	47-63 Hz	47-63 Hz
Fuse	1.5A 250V Slow-blow			
Output Voltage (Back-plane)	5V dc			
Output Current (max)	8A			
Wire Size	14 AWG max (single wire only)			
Environmental Conditions	Operational Temperature: 0 to 60° (32 to 140°F) Storage Temperature: -40 to 85 °C (-40 to 185°F) Relative Humidity: 5 to 95% (without condensation)			
Physical Width	1 slot			
Weight	1.85 lbs (0.84 kg)			
5-pole Terminal Block	A-B P/N 941274-05 Wago ¹ P/N 231-205/000-008 (1 included with each power supply)			

¹ Wago Corporation 9085 N. Deerbrook Trail Brown Deer WI 53223



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