

Allen-Bradley 1771-P2

PLC Power Supply Module



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Auxiliary Power Supply

(Cat. No. 1771-P2)

Installation Data

To the Installer

This document provides information on:

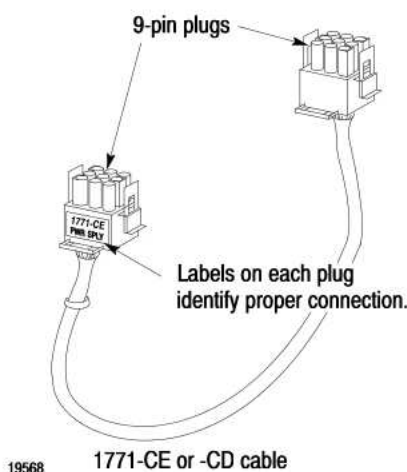
- preparing to install the power supply
- installing the power supply
- connecting ac power to the power supply
- power supply output
- troubleshooting
- specifications

Prepare for Installation

The auxiliary power supply can power one bulletin 1771 I/O chassis when used with an adapter module, a 1772 Mini-PLC-2[□] processor, or a 1772 Mini-PLC-2/15[□] processor.

The auxiliary power supply does not provide battery backup. For battery backup, use a system power supply (cat. no. 1771-P1).

Install the Power Supply and Connect Backplane Power



If You Are Mounting the Power Supply:	Use this Power Cable (Cat. No.):
on the left side of the chassis	1771-CE
within 5 cable-feet of the I/O chassis	1771-CD

If you mount the power supply on the left side-plate of the I/O chassis, mount the I/O chassis first (if you have not already done so). See the *Universal I/O Chassis Installation Data* (publication 1771-2.210) for information on mounting the I/O chassis.

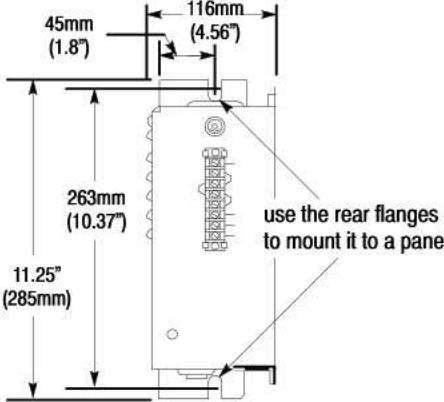
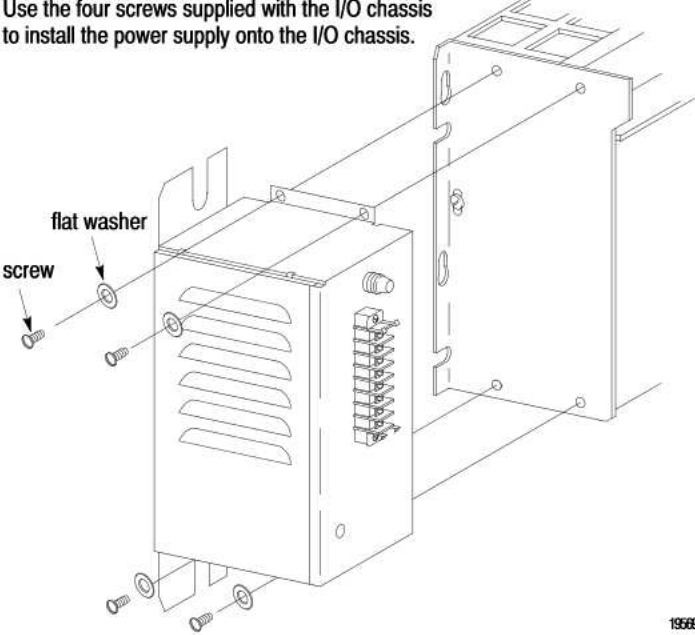
When mounted separately, the power supply can be mounted above or next to the I/O chassis. It can **not** be mounted below since it is necessary to allow convection cooling of both the power supply and the I/O chassis. A minimum vertical distance of six inches should be maintained.

Mount the Power Supply



ATTENTION: If you do not remove system power, you could damage the module circuitry and/or cause undesired operation with possible injury to personnel.

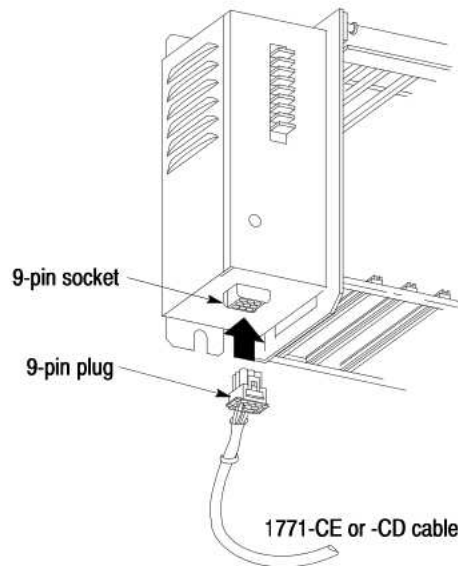
1. Remove system power.
2. Mount the power supply.

If Mounting Separately:	If Mounting on Left Side of Chassis:
<p>Mount the power supply up to 5 cable-feet from the I/O chassis.</p>  <p>12593-1</p> <p>Important: Do not mount the power supply below the I/O chassis.</p>	<p>Use the four screws supplied with the I/O chassis to install the power supply onto the I/O chassis.</p>  <p>19569</p> <p>Important: Place the flat washers provided between each mounting screw and the power supply. If you do not use the flat washers, the mounting screw intrudes into the I/O chassis and interferes with module insertion.</p>

Connect Backplane Power

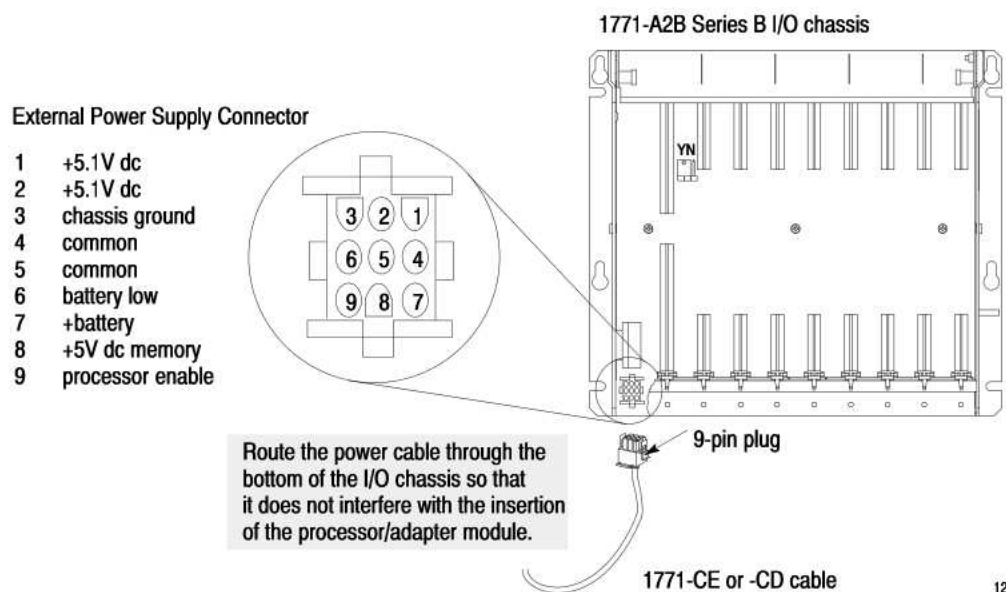
To connect backplane power:

1. Connect one 9-pin plug of the power cable to the 9-pin connector located on the bottom of the power supply.



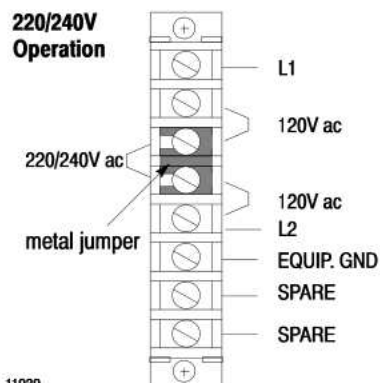
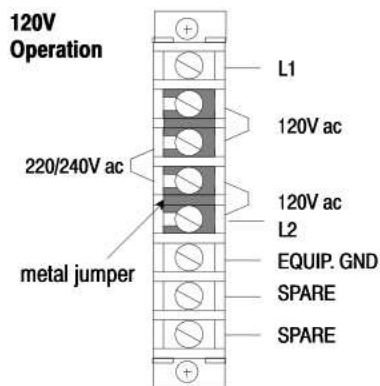
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2. Connect the other 9-pin plug to the external power supply connector on the I/O chassis. To make this connection, remove the processor/adaptor module and left-most I/O module from the I/O chassis.

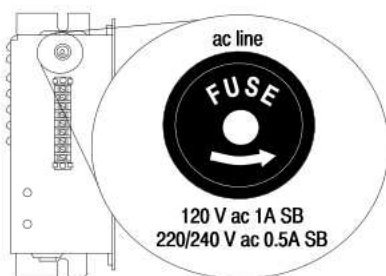


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Connect AC Power



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Before connecting ac power to the power supply, you must:

- check the input voltage
- check the fuse protection

Check the Input Voltage

The power supply is factory-shipped for 120V ac operation. You can use:

- 120V ac
- or
- 220/240V ac

Two metal jumpers are installed on the front terminal strip at the positions indicating 120V ac.



ATTENTION: Be sure the power supply is correctly jumpered for **either** 120V ac **or** 220/240V ac. Incorrect jumpering on the terminal strip may cause improper operation or damage to the power supply.

If you are using the power supply for 220/240V ac operation, remove **both** metal jumpers on the terminal strip from their original 120V positions. Install **one** of these jumpers at the terminal labeled 220/240V ac.

Check the Fuse Protection

The power supply is protected from overcurrent at its inputs by a slow-blow fuse. The power supply comes with one 1A slow-blow fuse installed for 120V operation. If you are using the power supply for 220/240V operation, remove the 1A fuse and replace it with the 0.5A slow-blow fuse that is provided. Replacement fuses are shown below:

Input Voltage	Fuse	Manufacturer's No.
120V ac	3AG 1A	Bussman: MDL 1A Littelfuse: 313001
220/240V ac	3AG 0.5A	Bussman: MDL 0.5A Littelfuse: 313.500

A replacement fuse kit (cat. no. 1771-FP) containing both 1A and 0.5A fuses is available. Contact your local Allen-Bradley representative for further information.

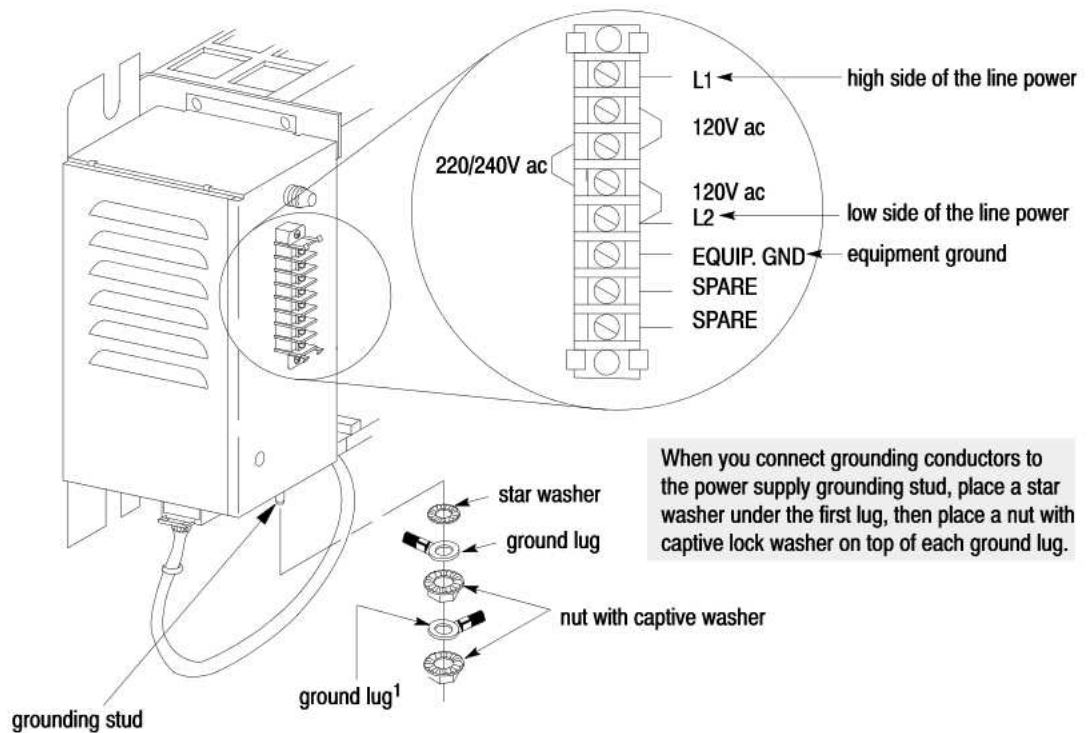
Connect AC Power Line

The power supply monitors input voltage for proper operating levels.

If Using the Power Supply for:	Normal Input Range ¹ :	Minimum Voltage:
120V ac operation	98 to 132V ac	92V
220/240V ac operation	196 to 250V ac	184V

¹ If input power is interrupted, the power supply signals the processor to restart automatically when the input line is restored to the normal ac input range (98V for 120V use, or 196V for 220/240V use).

AC input line connections for either 120V ac or 220/240V ac are made to the terminals marked L1 and L2. Use the grounding stud located on the bottom of the power supply to connect the power supply to the system ground bus. If you cannot do this, connect an equipment grounding conductor to EQUIP. GND.



¹ Use the cup washer if crimp-on lugs are not used.

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In applications where the ac line is especially unstable and subject to unusual variation, a constant voltage transformer can be used to stabilize the input voltage to the power supply as well as the input voltage to user devices. If a constant voltage transformer is used, it must have filtering to remove high harmonic content and provide a sinusoidal output.

The minimum size required for any type of external transformer feeding the power supply is 160VA at full loading of the power supply.

For information concerning the handling of fault conditions due to temporary loss of input line voltage to the power supply, consult the documentation supplied with the device (remote I/O adapter, Mini PLC-2/15 processor, etc.) that is controlling the I/O chassis.

Power Supply Output

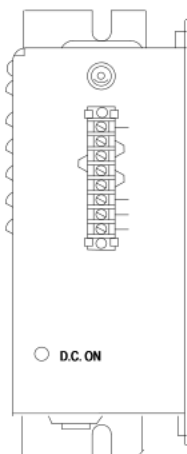
The auxiliary power supply provides 5.1V dc with a maximum output current of 6.5A. See your I/O module data sheets for specific current requirements.

Power supply outputs have built-in monitoring circuitry to protect logic circuitry in the I/O modules and the processors. During power-up and normal operation, outputs are checked for these conditions:

- overvoltage
- undervoltage
- overcurrent

The power supply shuts down if any of these conditions are detected. If this occurs, cycle ac power to the supply. To do this, disconnect and then reconnect user-line power, preferably from the user-supplied main disconnect switch mounted near the power supply.

Troubleshooting



12596-1

The power supply has a D.C. ON LED indicator that provides status indication during power supply operation.

	Normal Operation	If indicator is:	Then:
○ D.C. ON	on	off	it may be due to: <ul style="list-style-type: none"> • input voltage level not within specified range • blown fuse • overcurrent

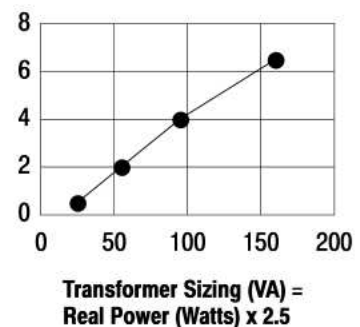
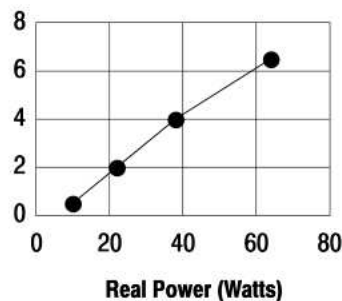
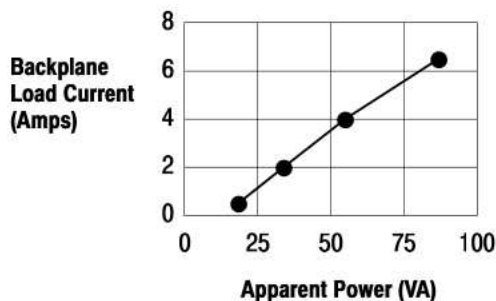
For additional assistance, contact your local Allen-Bradley representative.

Specifications

Nominal Input Voltage/Current	120V ac @ .75A 220/240V ac @ .38A
Input Voltage Range	for 120V operation: 98-132V ac for 220/240V operation: 196-250V ac
Input Power	real: 65W @ full load apparent: 90VA @ full load
External Transformer (if used)	160VA @ full load
Frequency Range	60/50Hz
Isolation Voltage	2500V dc for 1s } input power to equipment/chassis ground 1800V rms for 1s }
Output Voltage	logic circuitry: 5.1V dc \pm 5% memory: 5.1V dc \pm 5%
Output Current	6.5A maximum @ 5V dc
Power Loss Time Delay — Input Power Loss to Processor Disable	13.5ms \pm 2.5ms
Replacement Fuses	for 120V operation: 1A, 3AG (slow blow); Bussmann MDL 1 — Littelfuse 313001 for 220/240V operation: 0.5A, 3AG (slow blow); Bussmann MDL 0.5 — Littelfuse 313.500
Weight	5.89 kg (13 lbs)
Dimensions (W x H x D)	11.6cm x 28.6cm x 18.2cm (4.56" x 11.25" x 7.16")
Environmental Conditions:	Operating Temperature: 0 to 60°C (32 to 140°F) Storage Temperature: -40 to 85°C (-40 to 185°F) Relative Humidity: 5 to 95%, non-condensing
Location	left side of 1771 I/O chassis or 5 cable-feet from I/O chassis
Cables	1771-CD: 1.52m (5 ft) - connects I/O chassis to panel mounted 1771-P2 1771-CE: .30m (1 ft) - connects I/O chassis to chassis mounted 1771-P2

Use these graphs to determine your:

- cooling requirements
- power cost
- transformer size (unless the transformer manufacturer has a recommended multiplier for sizing a transformer for an ac-to-dc power supply)



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