Allen-Bradley 1746-P4

SLC 500 Rack Mounting Power Supply

Allen-Bradley 1746-P4 is a rack-mounted AC power supply for the SLC 500 modular control system. It supplies the chassis backplane and provides a separate 24 V DC user output for suitable field devices. Choose the 1746-P4 when the existing SLC chassis requires this supply type and its combined load fits the available output capacity.



Technical Specifications

Product Identity	
Manufacturer	Allen-Bradley
Catalog number	1746-P4
Functional Configuration	
Product function	SLC 500 rack power supply
User-output protection	Isolated, non-fused user supply
Performance & Power	
Input voltage	85–132 V AC or 170–250 V AC, selected by jumper
Input frequency	47–63 Hz
5 V backplane capacity	10 A
24 V backplane capacity	2.88 A
24 V user output	1 A
Combined output-power ceiling	70 W total across 5 V backplane, 24 V backplane and 24 V user power
Maximum inrush current	45 A
24 V user-output voltage range	20.4–27.6 V DC
Environment	
Operating temperature	0–60°C; no current derating for 1746-P4
Relative humidity	5–95%, noncondensing

Selected original manufacturer material follows on page 3.

Compatibility & Selection Guide

System compatibility. The 1746-P4 belongs to the SLC 500 modular chassis platform. Each chassis needs its own supply, so replacement selection requires a separate 5 V and 24 V load calculation for that chassis, including peripherals and user power. Other 1746-Px supplies have different input and output ratings; a shared family name alone does not establish an equivalent replacement.

Wiring & Installation Reference

Power connections

L1/L2 neutral. AC input · Select 85–132 V or 170–250 V with power removed before connecting the line.

Chassis ground. Protective grounding · Connect to the nearest ground bus with short specified copper conductors.

PWR OUT +24 V DC/COM. User-device supply · Limit to 1 A and include this load within the 70 W shared output budget; user output is not fused.

Installation checks

Prepare the chassis. Check enclosure, grounding and any chassis interconnect cable before installing the supply.

Fit the power supply. Align the circuit board with the left-hand chassis guides, seat it flush and secure the mounting screws to a maximum 1.2 N·m.

Set the input and connect power. With incoming power removed, set the voltage jumper, connect ground and input wiring, and tighten terminals to 0.8 N·m. Remove the protective label before operation.

Installation precautions. Turn off incoming power before connecting wires. Do not insert/remove the supply or disconnect wiring under power in a hazardous location. Use ESD precautions and a suitable tool-access enclosure. Keep the chassis and supply appropriately grounded. Protect against inductive-load switching surges with the specified isolation-transformer arrangement. For Series A, a 24 V user-output overload can shut down the supply and fault the CPU; correct the condition and reload the user program as required.

View power connection requirements (PDF) · PDF page 2 | View installation guide · PDF page 2

Manufacturer sources: SLC 500 Systems Selection Guide / SLC 500 Power Supplies Installation Instructions / 1746-P4 SLC Rack Mounting Power Supply.

Power supplies are designed to withstand brief power losses. Power loss does not affect system operation for a period between 20 ms and 3 s, depending on the load.

Power Supply Catalog Numbers and Specifications

Catalog Number	Line Voltage	Current Capacity (Amps) @ 5V	Current Capacity (Amps) at 24V	User Current Capacity	Inrush Current, max.
1746-P1	85…132/170…265V AC, 47…63 Hz	2 A	0.46 A	0.2 A @ 24V DC	20 A
1746-P2	85…132/170…265V AC, 47…63 Hz	5 A	0.96 A	0.2 A @ 24V DC	20 A
1746-P3	19.2…28.8V DC	3.6 A	0.87 A	–	20 A
1746-P4	85…132/170…250V AC, 47…63 Hz	10 A	2.88 A(1)	1 A @ 24V DC(1)	45 A
1746-P5	90…146V DC	5 A	0.96 A	0.2 A @ 24V DC	20 A
1746-P6	30…60V DC	5 A	0.96 A	0.2 A @ 24V DC	20 A
1746-P7	10…30V DC, isolated	12V DC input: 2 A 24V DC input: 3.6 A	12V DC input: 0.46 A 24V DC input: 0.87 A	–	--

(1) Total of all output power (5V backplane, 24V backplane, and 24V user source) must not exceed 70 W.

General 1746-Px Power Supply Specifications

Specification	Description
Temperature, operating	0…60 °C (32…140 °F) (Current capacity derated by 5% above 55 °C for P1, P2, P3, P5, P6 and P7, no derating for P4)
Relative humidity	5…95% noncondensing
Wiring	#14 AWG (2 mm^2)