

Allen-Bradley 1746-P1

SLC 500 Power Supply

Overview

Allen-Bradley 1746-P1 is an SLC 500 chassis power supply with 120/240 V AC input, 2 A at 5 V DC backplane capacity, 0.46 A at 24 V DC backplane capacity and an isolated 24 V DC user output.

01 / Function

Supplies the SLC 500 chassis backplane from an 85-132 V AC or 170-265 V AC source

02 / Function

Provides 2 A at 5 V DC and 0.46 A at 24 V DC for backplane loading calculations

03 / Function

Provides an isolated, non-fused 200 mA user output at 24 V DC

04 / Function

Supports SLC 500 modular power planning with documented load and hold-up limits

PRODUCT FIELD	OFFICIAL VALUE
Manufacturer	Allen-Bradley / Rockwell Automation
Catalog number	1746-P1
Product family	SLC 500
Product type	Chassis power supply

Technical parameter dashboard

Allen-Bradley 1746-P1

PARAMETER	VERIFIED VALUE	PARAMETER	VERIFIED VALUE	PARAMETER	VERIFIED VALUE
Manufacturer	Allen-Bradley / Rockwell Automation	Internal current capacity at 5 V DC	2 A	Current-capacity derating	5% above 55 deg C (131 deg F)
Catalog number	1746-P1	Internal current capacity at 24 V DC	0.46 A	Relative humidity	5-95%, noncondensing
Product family	SLC 500	24 V DC user-power current capacity	200 mA	Field wiring	No. 14 AWG (2 mm2)
Product type	Chassis power supply	24 V DC user-power voltage range	18-30 V DC	Fuse protection	1746-F1 or equivalent 250 V, 3 A fuse
Line voltage	85-132 V AC or 170-265 V AC	User-supplied overcurrent protection, maximum	15 A; time-delay type in ungrounded conductors	User-output construction	Isolated, non-fused 24 V DC output
Line frequency	47-63 Hz	Input-to-backplane isolation	1800 V AC RMS for 1 second	Installation document	Rockwell Automation publication 1746-IN004B-EN-P
Typical line power requirement	135 VA	CPU hold-up time	20 ms at full load; 3000 ms at no load		
Inrush current, maximum	20 A	Ambient operating temperature	0-60 deg C (32-140 deg F)		

Evidence boundary: Values are limited to Rockwell Automation publications 1746-IN004B-EN-P and 1747-SG001E-EN-E; final chassis loading and site protection remain installation-specific.

Official manufacturer evidence reviewed: Rockwell Automation SLC 500 Power Supplies Installation Instructions and SLC 500 System Selection Guide.

Applications and product precautions

Allen-Bradley 1746-P1

SLC 500 chassis power Feeds the documented 5 V DC and 24 V DC backplane loads in an SLC 500 modular chassis.	24 V DC sensor supply Provides the isolated 200 mA user output for approved low-current sensors and loads.	Machine-control cabinets Supports SLC 500 controller and I/O assemblies after both backplane rails are checked.	Legacy SLC 500 maintenance Provides a documented replacement path where the installed article is confirmed as 1746-P1.
01 / Check Confirm the complete 1746-P1 nameplate and approved SLC 500 chassis position before removal.	02 / Check Isolate incoming AC power and verify an electrically safe state before handling the power supply.	03 / Check Verify that the line source is within 85-132 V AC or 170-265 V AC at 47-63 Hz.	04 / Check Calculate the installed chassis demand against both the 2 A at 5 V DC and 0.46 A at 24 V DC limits.
05 / Check Limit the isolated 24 V DC user output to 200 mA and monitor the circuit where required by the installation instructions.	06 / Check Apply time-delay overcurrent protection in ungrounded conductors and preserve the specified fuse protection.	07 / Check Use an isolation transformer where switching inductive loads can introduce damaging voltage surges.	08 / Check Remove the protective label only after wiring is complete, then verify startup and the controlled I/O response before release.

Official manufacturer evidence reviewed: Rockwell Automation SLC 500 Power Supplies Installation Instructions and SLC 500 System Selection Guide.

Model-specific engineering FAQ

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What input supply does 1746-P1 accept?

Rockwell Automation specifies 85-132 V AC or 170-265 V AC at 47-63 Hz.

What backplane current can this power supply provide?

The documented internal capacities are 2 A at 5 V DC and 0.46 A at 24 V DC; both rails must be checked during power planning.

Does the unit provide a 24 V DC user output?

Yes. The PWR OUT terminals provide an isolated, non-fused 200 mA output with a documented 18-30 V DC range.

What is the maximum inrush current?

The official specification lists 20 A maximum inrush current for 1746-P1.

How does ambient temperature affect capacity?

Operation is specified from 0 to 60 deg C, with current capacity derated by 5% above 55 deg C.

What hold-up time is documented?

Rockwell lists 20 ms at full load and 3000 ms at no load; actual hold-up depends on power-supply loading.

Which fuse protection applies?

The published protection is 1746-F1 or an equivalent 250 V, 3 A fuse; the fuse is intended primarily to guard against fire caused by short circuits.

What must be checked before returning the chassis to service?

Verify identity, AC input, grounding, fuse and overcurrent protection, both backplane loads, user-output load, startup status and controlled I/O response.

Use the final installed drawing, configuration record and manufacturer instructions for acceptance decisions.

Related products and contact

Recommendation count is fitted to the available page area

NO.	RELATED PRODUCT	APTERPOWER LINK
01	Allen-Bradley 1746-P2	View product page
02	Allen-Bradley 1746-P4	View product page
03	Allen-Bradley 1746-A4	View product page
04	Allen-Bradley 1746-OW16	View product page
05	Allen-Bradley 1746-OW4	View product page
06	Allen-Bradley 1746-OV32	View product page
07	Allen-Bradley 1746-OG16	View product page
08	Allen-Bradley 1746-OBP16	View product page
09	Allen-Bradley 1746-OAP12	View product page
10	Allen-Bradley 1746-NIO4V	View product page
11	Allen-Bradley 1746-IV32	View product page
12	Allen-Bradley 1746-ITB16	View product page
13	Allen-Bradley 1746-IO8	View product page
14	Allen-Bradley 1746-IO12	View product page
15	Allen-Bradley 1746-IH16	View product page
16	Allen-Bradley 1746-NR4	View product page
17	Allen-Bradley 1746-NI16I	View product page
18	Allen-Bradley 1746-NO4I	View product page

Recommendation links are navigation aids only and do not establish compatibility.

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