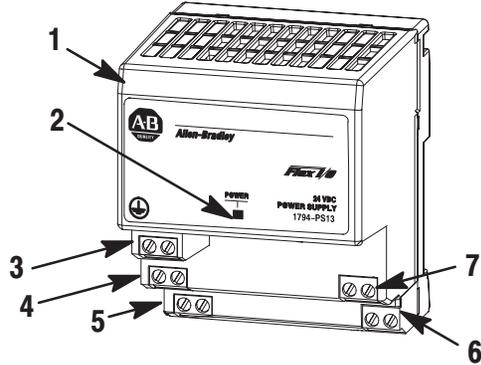




Installation Instructions

FLEX I/O Power Supply

(Cat. No. 1794-PS13)



Component Identification

1	Power Supply module 1794-PS13
2	Indicator
3	120/230V ac ground
4	120/230V ac common L2/N connections
5	120/230V ac power L1 connections
6	+24V dc connections
7	24V common connections

ATTENTION



The 1794-PS13 power supply provides sufficient 24V dc power to operate 4 adapter modules. Do not attempt to operate an entire FLEX I/O system with this power supply.

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of these products must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards. In no event will Rockwell Automation be responsible or liable for indirect or consequential damage resulting from the use or application of these products.

Any illustrations, charts, sample programs, and layout examples shown in this publication are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Rockwell Automation does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen–Bradley publication SGI–1.1, Safety Guidelines for Application, Installation, and Maintenance of Solid–State Control (available from your local Rockwell Automation office), describes some important differences between solid–state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this publication, notes may be used to make you aware of safety considerations. The following annotations and their accompanying statements help you to identify a potential hazard, avoid a potential hazard, and recognize the consequences of a potential hazard.

WARNING

Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

ATTENTION

Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

ATTENTION**Environment and Enclosure**

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC publication 60664-1), at altitudes up to 2000 meters without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

This equipment is supplied as “open type” equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present, and appropriately designed to prevent personal injury resulting from accessibility to live parts. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosures. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1, (“Industrial Automation Wiring and Grounding Guidelines”), for additional installation requirements pertaining to this equipment.

ATTENTION

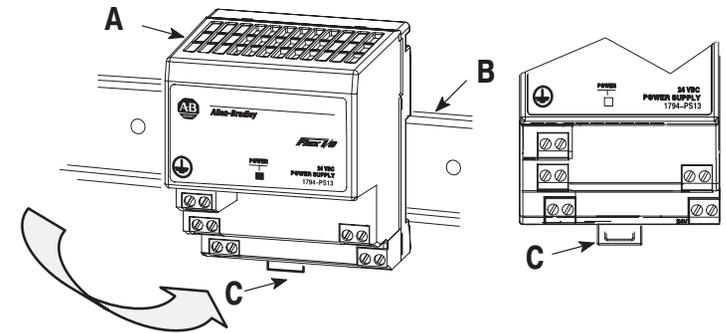
FLEX I/O is grounded through the DIN rail to chassis ground. Use zinc plated, yellow chromated steel DIN rail to assure proper grounding. Using other DIN rail materials (e.g. aluminum, plastic, etc.) which can corrode, oxidize or are poor conductors can result in improper or intermittent platform grounding.

Installing the Power Supply

WARNING



If you connect or disconnect wiring while the field side power is on, an electrical arc can occur. This could cause an explosion in hazardous installations. Be sure that power is removed or the area is nonhazardous before proceeding.

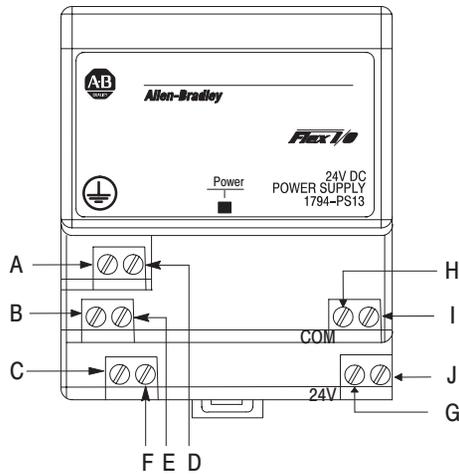


1. Position the power supply module **A** on a 35 x 7.5mm DIN rail **B** (A-B pt. no. 199-DR1) at 30° angle.

NOTE: For Panel/Wall mounting, refer to publication 1794-5.13, “Panel Mounting Kit, Cat. No. 1794-NM1.”

2. Rotate the power supply module onto the DIN rail with the top of the rail hooked under the lip on the rear of the adapter module.
3. Press the power supply module down onto the DIN rail until flush. Locking tab (**C**) will snap into position and lock the adapter module to the DIN rail.
4. If the power supply module does not lock in place, use a screwdriver or similar device to move the locking tab down while pressing the adapter module flush onto the DIN rail and release the locking tab to lock the adapter module in place. If necessary, push up on the locking tab to lock.
5. Connect the power supply wiring as shown under “Wiring.”

Wiring

**ATTENTION**

The 1794-PS13 power supply provides sufficient 24V dc power to operate 4 adapter modules. Do not attempt to operate an entire Flex I/O system with this power supply.

Terminals A, B and C are 120/230V supply terminals. Terminals D, E and F are available to daisychain this 120/230V power to other 1794-PS3 power supplies. If supplying 120V ac to the power supply, you can also power the ac modules in the adjacent system.

Torque screw terminals to 7 lb-in (0.6Nm) when making connections.

1. Connect the 120/230V ac power to the left side terminals on the connectors on the left side of the module as follows:

Connect		To
ac Ground	GND	A
120/230V ac common	L2/N	B
120/230V ac power	L1	C

2. Connect terminal G (+24V dc) to the +24V dc terminal on the first adapter.

3. Connect terminal **H** (+24V dc common) to the +24V dc common terminal on the first adapter.
 4. Repeat steps 3 and 4 using terminals **I** and **J** for the second adapter.
-

ATTENTION

The total length of wire for terminals H, I, J and G must not exceed 3m. Exceeding the 3m length can reduce noise immunity.

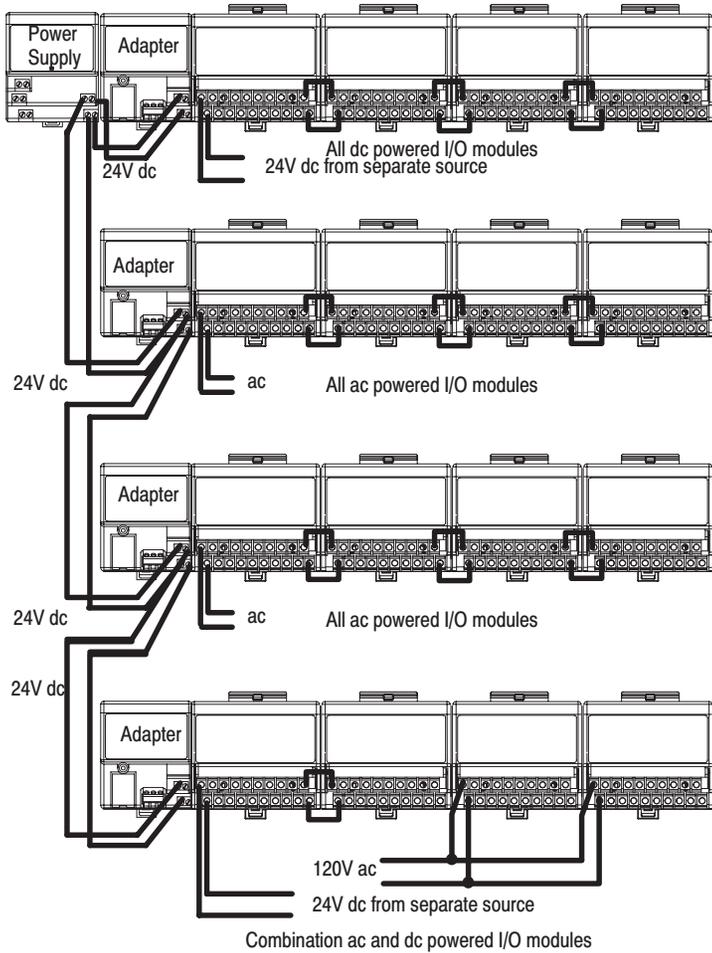


5. Connections **D**, **E** and **F** are used to pass 120/230V ac power to adjacent 1794-PS13 or -PS3 power supplies.
-

IMPORTANT

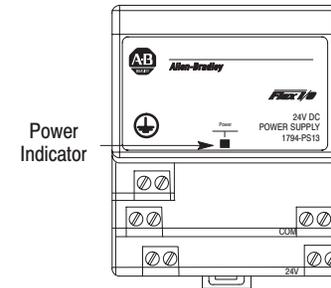
Input and output wiring must be in accordance with Class I, Division 2 wiring methods and in accordance with the authority having jurisdiction.

Example of Using a 1794-PS13 Power Supply to Power 4 Adapter Modules



Diagnostic Indicator

The power supply has 1 indicator.



The power indicator is on (green) when voltage at the output is between 20.4V dc and 35V dc.

Indicator	Description
ON (green)	Output voltage is greater than 20.4V dc, but less than 28V dc
OFF	No power applied to power supply.
	Output voltage exceeded 35V dc, and overvoltage protection shut down unit.
	Output current is above 3A.

The following information applies when operating this equipment in hazardous locations:

Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, and D Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.

WARNING**EXPLOSION HAZARD -**

- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
- Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- Substitution of components may impair suitability for Class I, Division 2.
- If this product contains batteries, they must only be changed in an area known to be nonhazardous.

Informations sur l'utilisation de cet équipement en environnements dangereux:

Les produits marqués CL I, DIV 2, GP A, B, C, D ne conviennent que une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.

AVERTISSEMENT**RISQUE D'EXPLOSION -**

- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.
- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.
- La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe 1, Division 2.
- S'assurer que l'environnement est classé non dangereux avant de changer les piles.

Specifications - Power Supply Module Cat. No. 1794-PS13**Input Specifications**

Nominal Supply Voltage	120V ac, 47-63Hz; 0.6A maximum 230V ac, 47-63Hz; 0.42A maximum
Voltage Range	85-265V ac
Inrush Current	40A typical, 1 ac cycle @ Vin 265V ac, 55°C
Interruption	Output voltage will stay within specification when input drops out for 1/2 cycle @ 47Hz, 85V ac with maximum load

Output Specifications

Nominal Output Voltage	+24V dc
Voltage Range	20.4-27.6V dc (includes noise and 5% ac ripple)
Output Current	1.3A maximum
Minimum Load	0mA
Output Surge	Sufficient to drive 4 adapters (surge of 23A for 2ms each)
Overvoltage Protection	Output internally limited to 35V dc. Cycle power to reenergize.
Isolation Voltage	2500V dc for 1 second

Specifications continued on next page.

Specifications - Power Supply Module Cat. No. 1794-PS13**General Specifications**

Mounting	Horizontal or vertical on a DIN rail, wall or panel
Terminal Screw Torque	7 lb-in (0.6Nm)
Dimensions Inches Millimeters	3.4H x 2.7W x 2.7D 87H x 68W x 69D
Environmental Conditions	
Operating Temperature	IEC 60068-2-1 (Test Ad, Operating Cold) IEC 60068-2-2 (Test Bd, Operating Dry Heat) IEC 60068-2-14 (Test Nb, Operating Thermal Shock) 32 to 131°F (0 to 55°C)
Storage Temperature	IEC 60068-2-1 (Test Ab, Unpackaged, Nonoperating Cold) IEC 60068-2-2 (Test Bb, Unpackaged, Nonoperating Dry Heat) IEC 60068-2-14 (Test Na, Unpackaged, Nonoperating Thermal Shock) -40 to 185°F (-40 to 85°C)
Relative Humidity	IEC 60068-2-30 (Test Db, Unpackaged, Nonoperating Damp Heat) 5 to 95%, noncondensing

Specifications continued on next page

Specifications - Power Supply Module Cat. No. 1794-PS13

Shock Operating Nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock) 30g 50g
Vibration	IEC 60068-2-6 (Test Fc, Operating) 5g @ 10-500Hz
ESD Immunity	IEC 61000-4-2 4kV contact discharges 8kV air discharges
Radiated RF Immunity	IEC 61000-4-3 10V/m with 1kHz sine-wave 80% AM from 30MHz to 1000MHz
EFT/B Immunity	IEC 61000-4-4 ± 2 kV @ 5kHz on power ports
Surge Transient Immunity	IEC 61000-4-5 ± 1 kV line-line (DM) and ± 2 kV line-earth (CM) on ac power ports
Conducted RF Immunity	IEC 61000-4-6 10V rms with 1kHz sine wave 80% AM from 150kHz to 80MHz
Emissions	CISPR 11 Group 1, Class A (with appropriate enclosure)
Enclosure Type Rating	None (open-style)
Power Conductors Wire Size	12 gauge (4mm ²) maximum solid or stranded copper wire rated at 75°C or greater
Category	3/64 inch (1.2mm) insulation max. 1 ¹

Specifications continued on next page

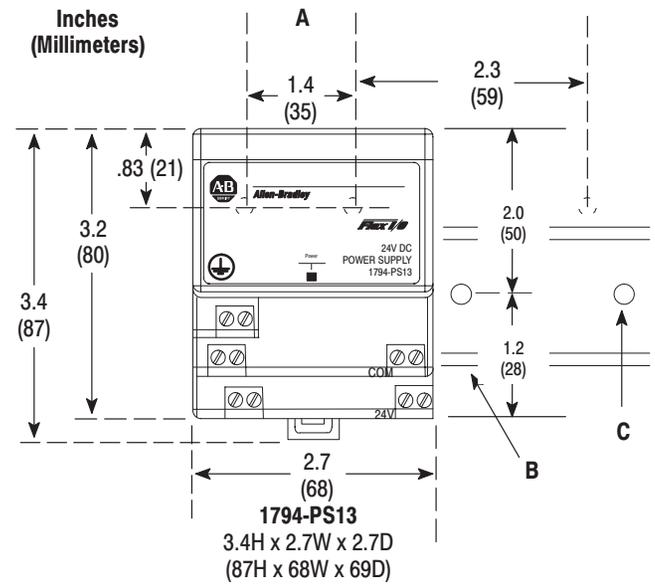
Specifications - Power Supply Module Cat. No. 1794-PS13

Certifications (when product is marked)	UL	UL Listed Industrial Control Equipment
	UL	UL Listed for Class I, Division 2 Group A, B, C and D Hazardous Locations
	CSA	CSA Certified Process Control Equipment for Class I, Division 2 Group A, B, C, D Hazardous Locations
	CE ²	European Union 89/336/EEC EMC Directive, compliant with: EN 61000-6-4, Industrial Emissions EN 50082-2, Industrial Immunity EN 61326, Meas./Control/Lab., Industrial Requirements EN 61000-6-2, Industrial Immunity
	CE ²	European Union 73/23/EEC LVD Directive, compliant with: EN 61131-2, Programmable Controllers
	C-Tick ²	Australian Radiocommunications Act, compliant with: AS/NZS 2064, Industrial Emissions

¹ Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

² See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates and other certification details

Mounting Dimensions



- A** = Mounting hole dimensions for optional mounting kit
- B** = DIN rail
- C** = Secure DIN rail approximately every 200mm



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