Features

- > Built-in fuse and ON/OFF power switch
- Designed to integrate tightly with groov EPIC[®] processor and chassis
- > Wide input voltage ranges
- > UL Hazardous Locations approved and ATEX compliant

DESCRIPTION

groov® EPIC power supplies, converters, and adapters provide AC or DC options to power your Opto 22 *groov* EPIC system. Packaged in a modern and sturdy housing, *groov* EPIC power supplies include a built-in fuse and an ON/OFF power switch for ease of use.

The **GRV-EPIC-PSAC** power supply and the **GRV-EPIC-PSDC** voltage converter are designed to provide power for a *groov* EPIC chassis with a GRV-EPIC-PR1 processor, and *groov* I/O modules mounted on the chassis. The combination of a chassis, processor, and modules is called an *I/O unit*.

The **GRV-EPIC-PSPT** pass-through power adapter is designed to allow you to connect a user-supplied, external 12 V power supply to the I/O unit.

All *groov* power supplies, voltage converters, and adapters are UL/cUL listed and compliant with the ATEX, Low Voltage, and EMC CE directives.



GRV-EPIC-PSAC power supply



GRV-EPIC-PSDC power supply



Part Numbers

Part	Description
GRV-EPIC-PSAC	Power supply, 110–240 VAC
GRV-EPIC-PSDC	Power converter, 24–48 VDC
GRV-EPIC-PSPT	Pass-through power adapter, 10–15 VDC



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SPECIFICATION

Specification	GRV-EPIC-PSAC	GRV-EPIC-PSDC	GRV-EPIC-PSPT		
Max Output Power	60 W (-20 °C ≤ T _a ≤ 50 °C) 50 W (50 °C < T _a ≤ 70 °C)	50 W (-20 °C ≤ T _a ≤ 70 °C)	108 W from external 12 VDC supply, (-20 °C \leq T_a \leq 70 °C)		
Input Voltage Range	110 to 240 VAC nominal, 100 to 264 VAC max.	24 to 48 VDC nominal, 22 to 50 VDC max.	10 to 15 VDC		
Typical Input Current (max load)	0.6 A at 115 VAC	3.5 A at 22 VDC	9 A at 12 VDC		
Inrush Current	30 A at 115 VAC	2.5 I ² t (A ² s)	2.5 l ² t (A ² s)		
Input Frequency Range	50 Hz to 60 Hz	n/a	n/a		
Power Factor	>0.98 at 115 VAC, full load	n/a	n/a		
Wire size	28–12 AWG	28–12 AWG	28–12 AWG		
Torque (connector screw)	4.4 in-lb	4.4 in-lb	4.4 in-lb		
Fuse	2 A 250 V Slow Opto 22 PN: GRV-EPIC-PSAC-FUSE	4 A 250 V Slow Opto 22 PN: GRV-EPIC-PSDC-FUSE	10 A 125 V Fast Opto 22 PN: GRV-EPIC-PSPT-FUSE		
Operating Ambient Temperature	-20 °C to 70 °C	-20 °C to 70 °C	-20 °C to 70 °C		
Altitude Temperature Derating	5 °C per 1000 m over 2000 m	5 °C per 1000 m over 2000 m	n/a		
MTBF (minimum, 25 °C)	650 khrs	1.9 Mhrs	4.5 Mhrs		
Agency Approvals	UL/cUL(Class 1 Div. 2) ^a , CE, ATEX(Category 3, Zone 2), RoHS, DFARS; UKCA				
Warranty	30 months	30 months	30 months		

a. For use in hazardous locations, equipment must be mounted in an enclosure that meets the requirements of the National Electrical Code, ANSI/NFPA 70, and ANSI/ISA-61010-1 (82.02.01).



MOUNTING

In the following instructions, the groov EPIC power supply, adapter, or converter is referred to as "power supply".

Important: Ensure the power supply is properly mounted to avoid damage to the EPIC processor connector pins.

1. Orient the *groov* EPIC chassis so that the module connector numbers are right-side up, with **0** on the left as shown in the diagram below.



2. Hold the power supply at a 45° angle, and align the tabs on the back of the power supply with the notches on the chassis.





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3. Lower the front-end of the power supply onto the chassis until you feel the plug snap into the slot.



4. Follow the wiring guidelines in "Power Supply Guidelines and Wiring" on page 6 to connect the power source to the power wiring connector of the *groov* EPIC power supply.

Note: To make it easier to connect the power supply wires, you can remove the power wiring connector from the power supply by loosening the screws on either side of the connector. See the diagram below.

5. Secure the connections by tightening the screws on the power wiring connector.





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6. Secure the power wiring connector to the power supply by tightening the two screws next to the connection screws.



UN-MOUNTING THE POWER SUPPLY, CONVERTER, OR ADAPTER

- 1. Turn off the power switch on the power supply.
- 2. De-energize power to the power supply.
- 3. Un-mount the processor according to the instructions in the groov EPIC Processor Data Sheet (form 2245).

IMPORTANT: Do not attempt to remove the processor and power supply as a single unit.

- 4. Loosen the screws of the power wiring connector (as shown in the diagram below) and remove the connector from the power supply.
- 5. Hold the top of the power supply with one hand, and use your other hand to lift the front of the power supply by the lip.
- 6. Pivot the lip up to disconnect the power supply from the chassis.
- 7. Remove the power supply from the chassis by lifting it up and off the top of the chassis.





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POWER SUPPLY GUIDELINES AND WIRING

Always use a separate field supply

Use a separate power supply for the field side of the I/O. Using the chassis supply for field actuation and monitoring defeats the isolation the I/O modules offer and therefore increases the chance of a ground loop within the control system. Additionally, fluctuations on the field side can cause undesirable voltage fluctuations that may interfere with the processor's operation.

Some modules (for example, the GRV-OVMALC-8) provide their own isolated, regulated, field-side power supply.

GRV-EPIC-PSAC

Power Wiring Diagrams

Before wiring the GRV-EPIC-PSAC, GRV-EPIC-PSDC or GRV-EPIC-PSPT, verify that your wiring cables conform to the requirements described above.

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GRV-EPIC-PSDC, GRV-EPIC-PSPT

Opto 22 recommends you follow these wiring guidelines:

Use a mains-isolated 24 to 48 VDC power source or supply to feed

- For GRV-EPIC-PSDC or GRV-EPIC-PSPT with DC input, use 16

For GRV-EPIC-PSAC, use 18 to 12 AWG. Keep the wires as short

to 12 AWG. Keep the wires as short as possible.

Power wiring guidelines

Use the appropriate gage wire:

the GRV-EPIC-PSDC.

as possible.





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DIMENSIONS: GRV-EPIC-PSAC, GRV-EPIC-PSDC, AND GRV-EPIC-PSPT





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CALCULATING POWER REQUIREMENTS

The GRV-EPIC-PSAC power supply is limited to 60 W and the GRV-EPIC-PSDC power converter is limited to 50 W. To verify that you do not exceed these ratings—particularly when you are using GRV-OVMALC-8 and GRV-OVMAILP-8 modules—fill out this worksheet (one per chassis; both sides) to calculate how much power your unit will require with the modules you selected.

Item	Quantity	x Power Req (W)	Total Power Req (W)
groov EPIC PR1 processor (GRV-EPIC-PR1)		7.1	
GRV-CSERI-4 serial input module		1.5	
GRV-IAC-24 analog input module		1.0	
GRV-IACDCTTL-24 analog input module		1.0	
GRV-IACDCTTLS-24 analog input module		1.0	
GRV-IACHV-24 analog input module		1.0	
GRV-IACHVS-24 analog input module		1.0	
GRV-IACI-12 analog input module		1.0	
GRV-IACIHV-12 analog input module		1.0	
GRV-IACIHVS-12 analog input module		1.0	
GRV-IACIS-12 analog input module		1.0	
GRV-IACS-24 analog input module		1.0	
GRV-IDC-24 DC input module		1.2	
GRV-IDCI-12 DC input module		1.2	
GRV-IDCIFQ-12 DC input module		1.0	
GRV-IDCIS-12 DC input module		1.2	
GRV-IDCS-24 DC input module		1.2	
GRV-IDCSW-12 DC input module		2.4	
GRV-IICTD-12 analog input module		1.0	
GRV-IMA-24 analog input module		1.0	
GRV-IMAI-8 analog input module		1.4	
GRV-IRTD-8 analog input module		1.3	
GRV-ITM-12 analog input module		1.3	
GRV-ITMI-8 analog input module		1.4	
GRV-ITR-12 analog input module		1.3	
GRV-IV-24 analog input module		1.0	
GRV-IVAPM-3 analog input module (power monitoring)			
GRV-IVI-12 analog input module		2.2	
GRV-OAC-12 analog output module		1.3	
GRV-OACI-12 analog output module		1.3	
GRV-OACIS-12 analog output module		1.3	

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Item	Quantity	x Power Req (W)	Total Power Req (W)
GRV-OACS-12 analog output module		1.3	
GRV-ODCI-12 DC output module		1.2	
GRV-ODCIS-12 DC output module		1.2	
GRV-ODCSRC-24 DC output module		1.2	
GRV-OMRIS-8 analog output module		1.4	
GRV-OVMAILP-8 analog output module (all voltage outputs)		1.8	
GRV-OVMAILP-8 analog output module (all current outputs)		6.0	
GRV-OVMALC-8 analog output module (all voltage outputs)		1.8	
GRV-OVMALC-8 analog output module (all current outputs)		6.2	
GRV-MM1001-10 multi-signal, multifunction module			
Total			



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