

## groov EPIC POWER SUPPLIES, CONVERTERS, AND ADAPTERS

### 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



GRV-EPIC-PSAC power supply

### DESCRIPTION

*groov* EPIC power supplies, converters, and adapters provide AC or DC power for your Opto 22 *groov* EPIC system. Packaged in a modern and sturdy housing with clean lines, *groov* EPIC power supplies, converters, and adapters 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, adapters, modules, and processors are UL Hazardous Locations approved and compliant with the ATEX, Low Voltage, and EMC CE directives. Each module is factory tested twice before shipment and is guaranteed for life.



### Part Numbers

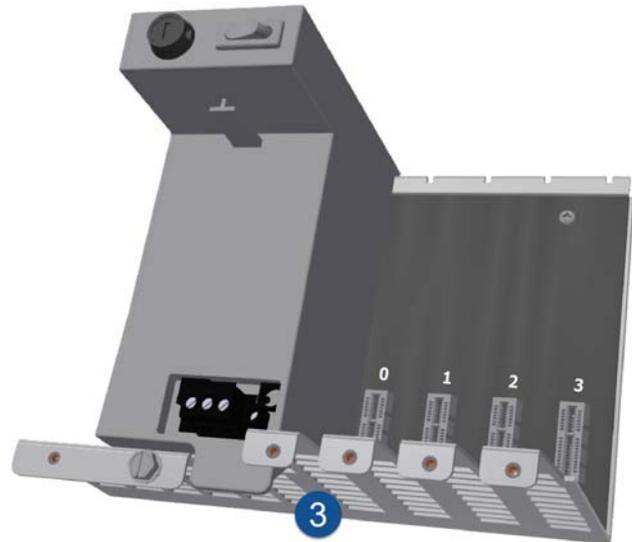
Part	Description
GRV-EPIC-PSAC	Power supply, 100–264 VAC
GRV-EPIC-PSDC	Power converter, 22–50 VDC
GRV-EPIC-PSPT	Pass-through power adapter, 11.4–12.6 VDC, up to 9 A

Preliminary

## MOUNTING

The following instructions describe how to install a *groov* EPIC power supply, adapter, or converter to the chassis:

1. Place the *groov* EPIC chassis so that the module connector numbers are right-side up, with zero on the left, as shown in the diagram below.
2. Hold the power supply at a 45° angle, with the tabs at the bottom of the supply aligned with the notches on the chassis.
3. Lower the front-end of the supply onto the chassis until you feel the plug snap into the slot.



## REMOVING THE POWER SUPPLY, CONVERTER, OR ADAPTER

Before you remove the power supply, converter, or adapter, do the following tasks:

- Remove the processor first. Do not attempt to remove the processor and the power supply, converter, or adapter as a single unit.
- Ensure that you have turned off the unit and disconnected the power supply wires.

Do the following steps:

1. Hold the back of the power supply, converter, or adapter with one hand, then using the thumb of your other hand, lift the front of the power supply by the lip.
2. Slide the power supply back, then up.

Preliminary

## SPECIFICATION

Specification	GRV-EPIC-PSAC	GRV-EPIC-PSDC	GRV-EPIC-PSPT
Rated Power (70 °C)	60 W	50 W	108 W from external 12 VDC supply
Input Voltage Range	110 to 240 VAC nominal, 100 to 264 VAC max.	24 to 48 VDC nominal, 22 to 50 VDC max.	11.4 to 12.6 VDC
Typical Input Current (rated load)	0.6 A at 115 VAC	3.5 A at 22 VDC	9 A
Inrush Current	30 A at 115 VAC	2.5 A <sup>2</sup> s	2.5 A <sup>2</sup> 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
Fuse	2 A 250 V Slow (Opto 22 part number R6790)	4 A 250 V Slow (Opto 22 part number R83519)	10 A 125 V Fast (Opto 22 part number R7423)
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
MTTF (minimum, 25 °C)	650 khrs	4.5 Mhrs	4.5 Mhrs
Agency Approvals	UL/cUL (Class 1 Div. 2), CE, ATEX (Category 3, Zone 2), RoHS, DFARS	UL/cUL (Class 1 Div. 2), CE, ATEX (Category 3, Zone 2), RoHS, DFARS	UL/cUL (Class 1 Div. 2), CE, ATEX (Category 3, Zone 2), RoHS, DFARS
Warranty	30 months	30 months	30 months

Preliminary

## 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 module offers and therefore increases the chance of a ground loop within the control system. Additionally, a sudden change of current on the field side can cause undesirable voltage fluctuations that may interfere with the controller or I/O unit's operation.

### Power Wiring Diagrams

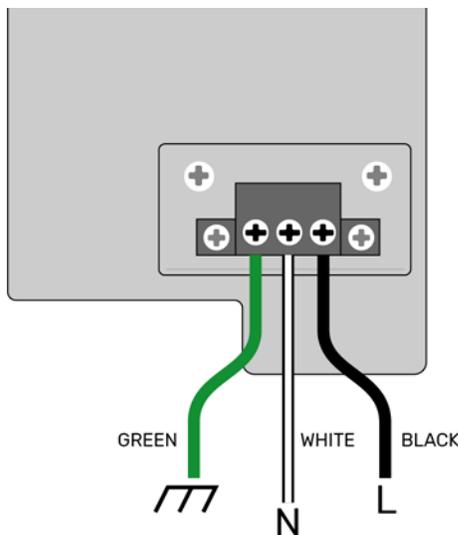
Before wiring the GRV-EPIC-PSAC, GRV-EPIC-PSDC or GRV-EPIC-PSPT, verify that your wiring cables conform to the requirements described previously.

### Power wiring guidelines

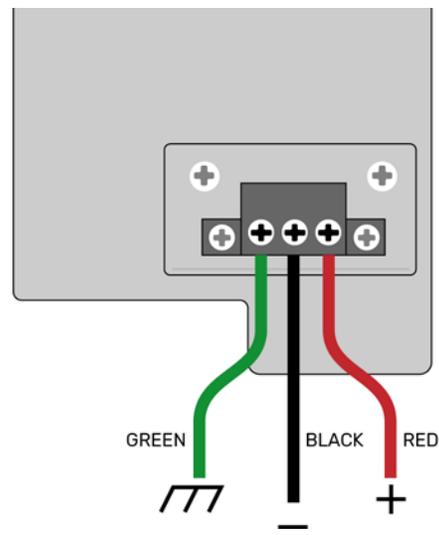
Opto 22 recommends you follow these wiring guidelines:

- Use a mains-isolated 24 to 48 VDC power source or supply to feed the GRV-EPIC-PSDC.
- Use the appropriate gage wire:
  - For GRV-EPIC-PSDC or GRV-EPIC-PSPT with DC input, use 16 AWG or larger wire. Keep the wires as short as possible.
  - For GRV-EPIC-PSAC or GRV-EPIC-PSPT with AC input, use 18 AWG or larger wire. Keep the wires as short as possible.

GRV-EPIC-PSAC



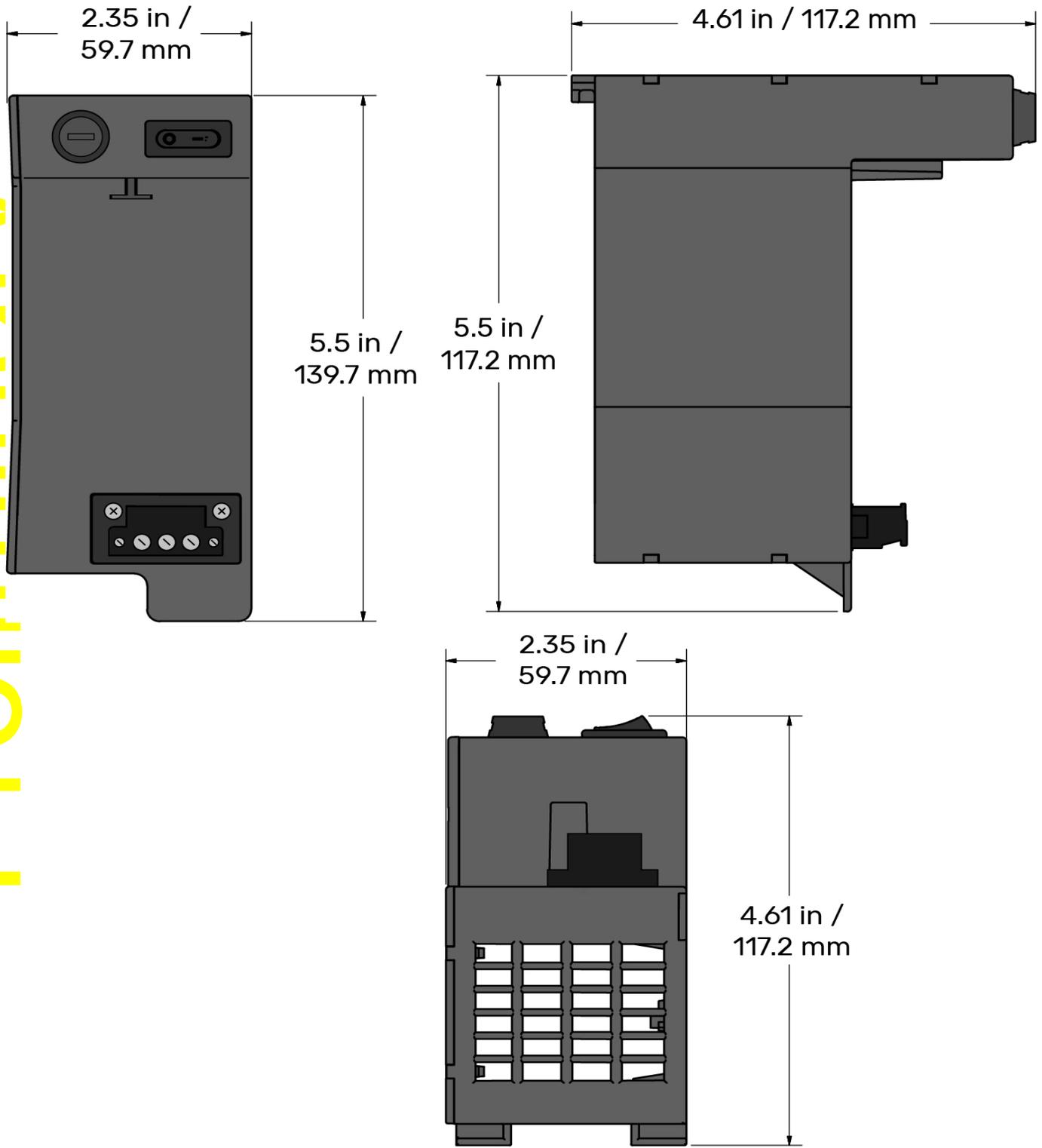
GRV-EPIC-PSDC, GRV-EPIC-PSPT



Preliminary

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

Preliminary



## CALCULATING POWER REQUIREMENTS

Opto 22 recommends using one power supply per I/O unit (processor + chassis + modules). To determine power requirements for products not listed in these tables, see the data sheets for the individual products.

**IMPORTANT NOTE:** The GRV-EPIC-PSAC and GRV-EPIC-PSDC power supplies are limited to 60 W at 25 °C, 50 W at 70 °C. Do not exceed these ratings.

Item	Quantity	x Power Req (W)	Total Power Req (W)
groov EPIC PR1 processor (GRV-EPIC-PR1)		7.1	
GRV-IAC-24 analog input module		1.0	
GRV-IACDCTL-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-IDCIS-12 DC input module		1.2	
GRV-IDCS-24 DC input module		1.2	
GRV-IMA-24 analog input module		1.0	
GRV-ITMI-8 analog input module		1.4	
GRV-IV-24 analog input module		1.0	
GRV-OAC-12 analog output module		1.3	
GRV-OACI-12 analog output module		1.3	
GRV-OACIS-12 analog output module		1.3	
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-OVMALC-8 analog output module (all voltage outputs)		1.8	
GRV-OVMALC-8 analog output module (all current outputs)		3.6	
Total			

Preliminary