

DC Power Supplies (26:47)

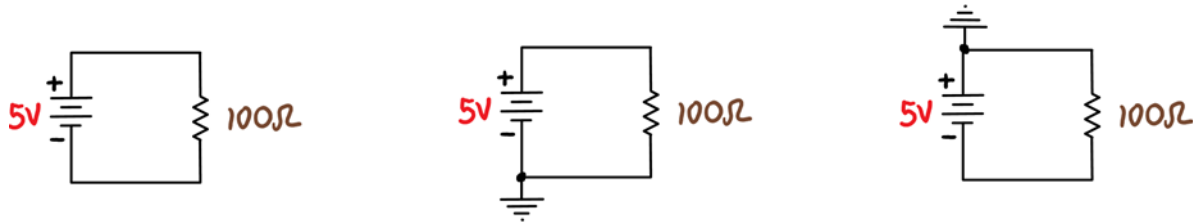
Illustrate a schematic representation of the Tektronix CPS250 Triple Output Power Supply

Identify how polarity of each source is indicated.

Discuss the properties of the 5V source.

Draw the schematic symbol for ground. Identify the purpose of ground. Identify those elements electrically connected to the ground terminal of the DC power supply.

Illustrate how conventional current and electrons flow through each of these circuits. Differentiate how ground acts with respect to sourcing and sinking electrons for each scenario.



Identify whether the grounded green binding post is electrically connected to any of the 3 sources.

Identify how to ground reference a source on the DC power supply.

Given a negatively grounded 5V source identify the voltage differential observed for the following voltmeter placements:

- 1) red – positive terminal of 5V source, black - negative terminal of 5V source
- 2) red – negative terminal of 5V source, black – grounded green binding post
- 3) red – positive terminal of 5V source, black - grounded green binding post
- 4) red – positive terminal of 5V source, black – some grounded object

Given a positively grounded 5V source identify the voltage differential observed for the following voltmeter placements:

- 1) red – positive terminal of 5V source, black - negative terminal of 5V source
- 2) red – positive terminal of 5V source, black – grounded green binding post
- 3) red – negative terminal of 5V source, black - grounded green binding post
- 4) red – negative terminal of 5V source, black – some grounded object

Identify other ground referencing schemes and illustrate their schematic symbols. Describe the properties of an object employed as a ground reference.

Describe the purpose of placing the selector switch in the upper right corner in “Independent” mode.

Describe properties of the adjustable A and B sources.

Identify which adjustment knobs control the output of the adjustable A and B sources.

Identify the purpose of the selector switch between the two needle meters. Identify the quantity displayed for each needle meter.

Identify how to measure output voltage more accurately than the built-in needle meter.

Describe current limitation.

Identify how the DC power supply indicates it is in overload.

Identify how overloads can occur.

Identify why adjustable current limitation is an attractive feature for a power supply.