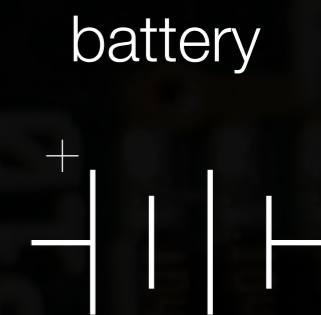
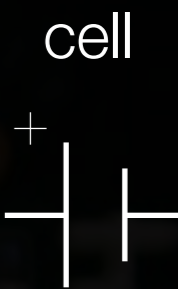


Passive
Electrical
Components



volt•age |'vōltij|

an electromotive force or potential difference which causes electrons to flow, expressed in volts.

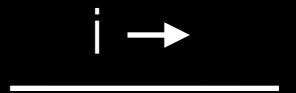


voltage source

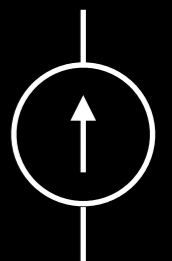


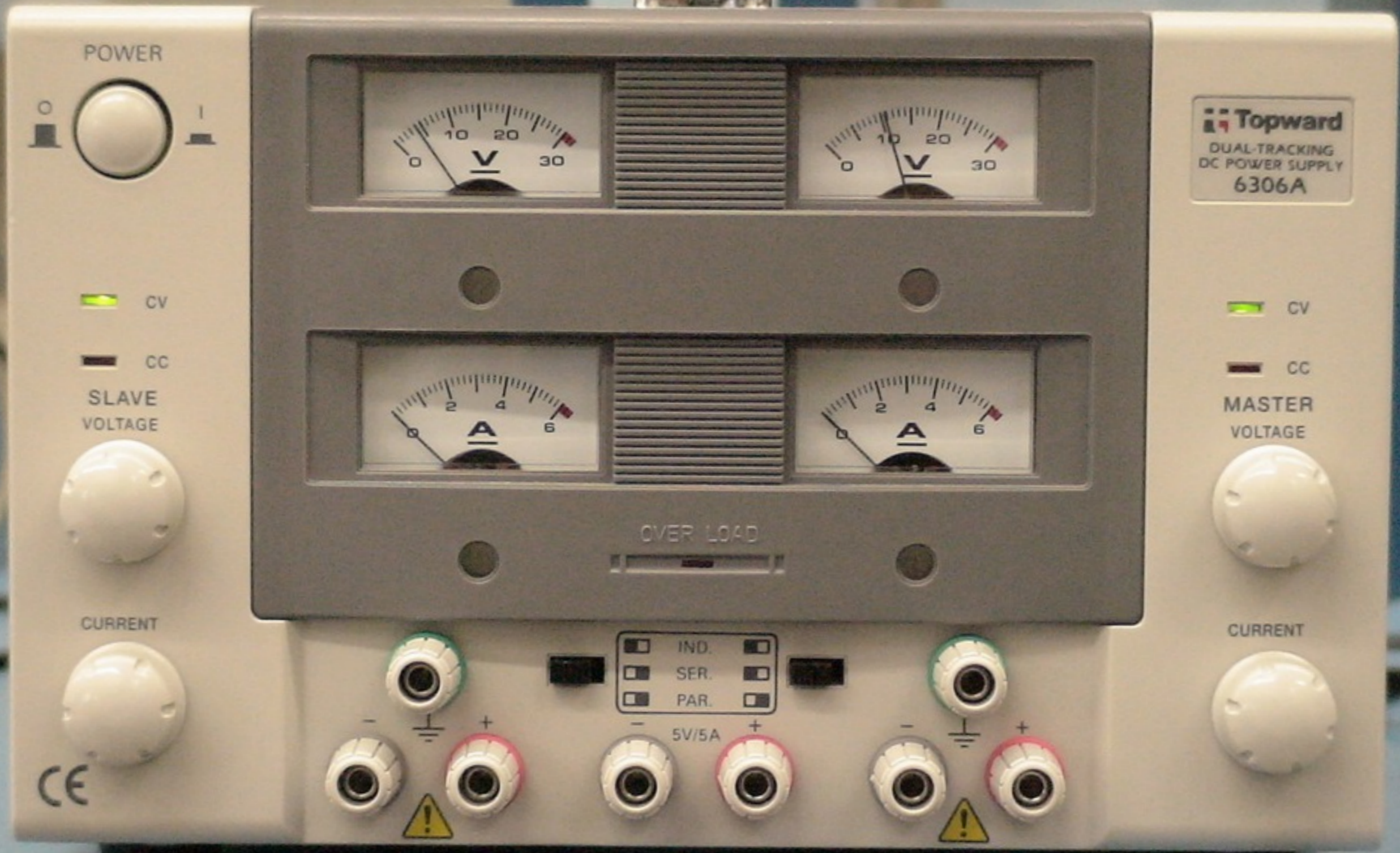
cur•rent |'kərənt; 'kə-rənt|

a quantity representing the rate of flow of electric charge, usually measured in Amperes.



current source





Topward
DUAL-TRACKING
DC POWER SUPPLY
6306A

POWER

0 I

POWER knob

CV

CC

SLAVE
VOLTAGE

SLAVE VOLTAGE knob

CURRENT

CURRENT knob

CE



OVER LOAD

<input type="checkbox"/>	IND.	<input type="checkbox"/>
<input type="checkbox"/>	SER.	<input type="checkbox"/>
<input type="checkbox"/>	PAR.	<input type="checkbox"/>

5V/5A

CV

CC

MASTER
VOLTAGE

MASTER VOLTAGE knob

CURRENT

CURRENT knob



re•sist•ance |ri'zistəns|

the degree to which a substance or device opposes the passage of an electric current, causing energy dissipation.



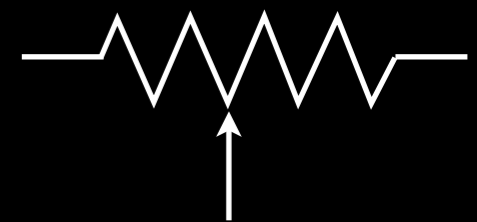
resistor

100 Ω



potentiometer

10k Ω

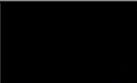








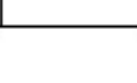


Ohm's Law

The voltage drop across a conductor is equal to the product of the resistance and the current flowing through the conductor ($V=IR$).



$$R = ab \times 10^c$$

BLACK		0	Multiplier
BROWN		1	_____0
RED		2	_____00
ORANGE		3	_____000
YELLOW		4	__0,000
GREEN		5	_00,000
BLUE		6	000,000
VIOLET		7	
GRAY		8	
WHITE		9	

EXAMPLE

47,000 Ohms
or
47-K Ω

1st Digit — 4
2nd Digit — 7
Multiplier — 000
Tolerance — 2% - Red

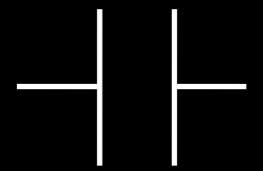


ca•pac•i•tance |kə'pasitəns|

the ability of a system to store an electric charge, defined as the ratio of the change in an electric charge in a system to the corresponding change in its electric potential.

capacitor

10 pF



polar capacitor

1.0 uF



$$I(t) = C \frac{dV}{dt} \quad V(t) = \frac{1}{C} \int_0^t I(\tau) d\tau$$

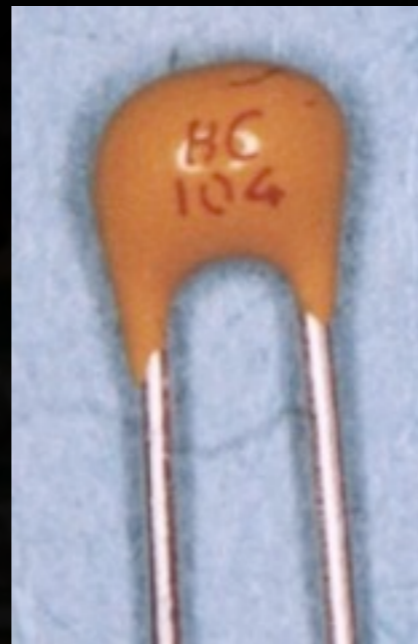
ceramic disk



mylar



monolithic
ceramic



electrolytic



tantalum



$$C = ab \times 10^c \text{ pF}$$

(usually)



223
A1K



in•duct•ance |in'dæktəns|

noun

the property of an electric conductor or circuit that causes an electromotive force to be generated by a change in the current.

$$I(t) = \frac{1}{L} \int_0^t V(\tau) d\tau \quad V(t) = L \frac{dI}{dt}$$

inductor

1 mH

