

FUNDAMENTALS OF POWER SUPPLIES

ROHDE & SCHWARZ

Make ideas real





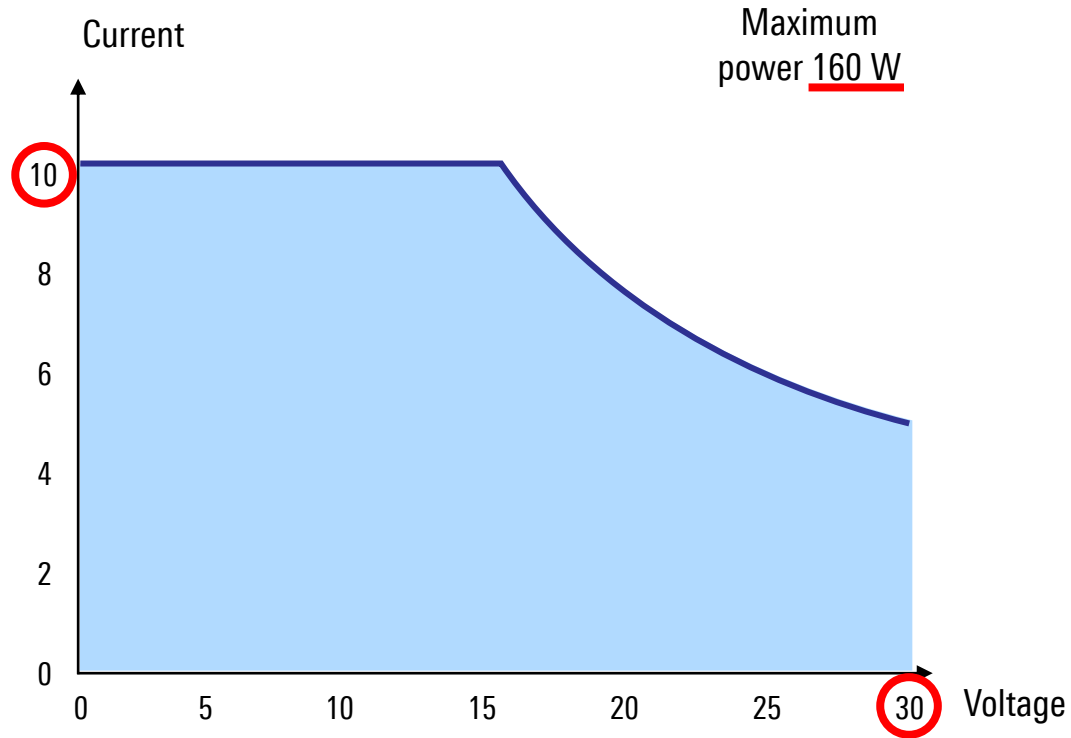
COMBINATIONS OF VOLTAGE AND CURRENT

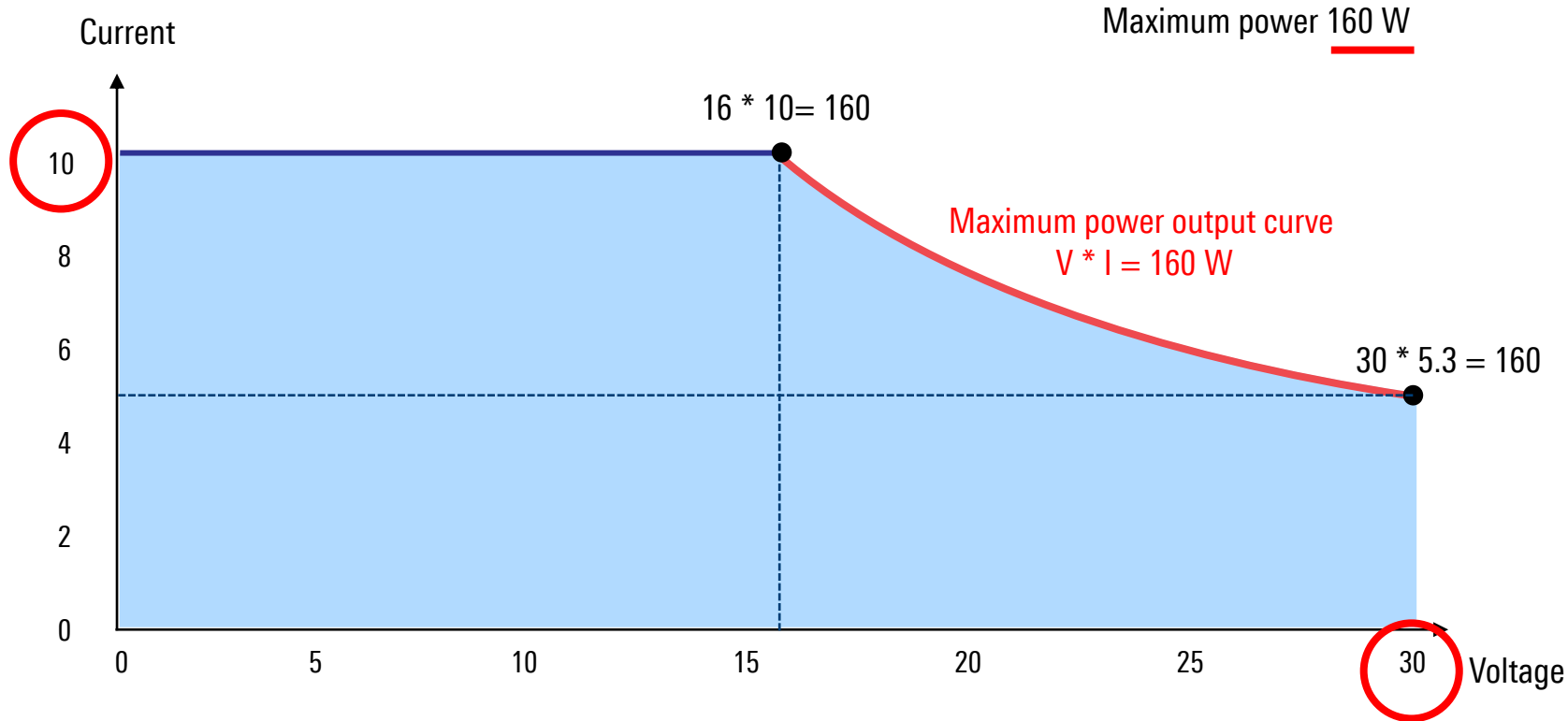
Power = Voltage * Current

Max Power < (Max Voltage * Max Current)

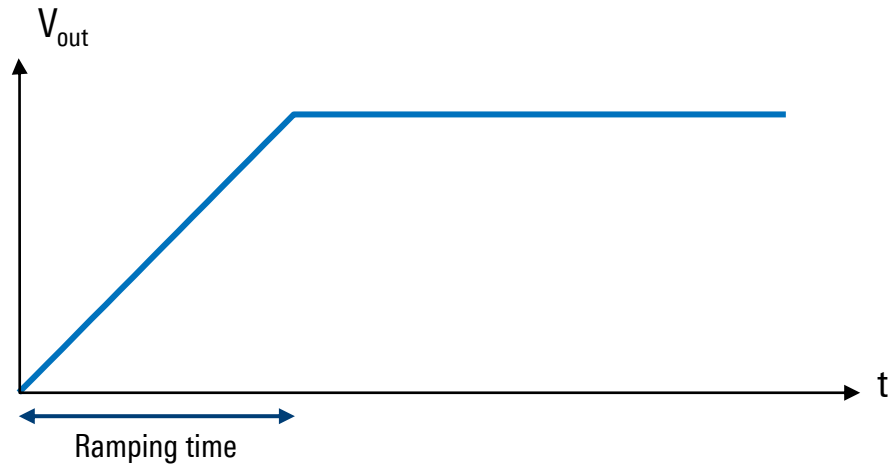
Voltage	Current	Power
1.0 V	40 A	40 W
5.0 V	8 A	40 W
10 V	4 A	40 W
20 V	2 A	40 W
40 V	1 A	40 W
80 V	0.5 A	40 W
100 V	0.4 A	40 W

DERATING CURVE



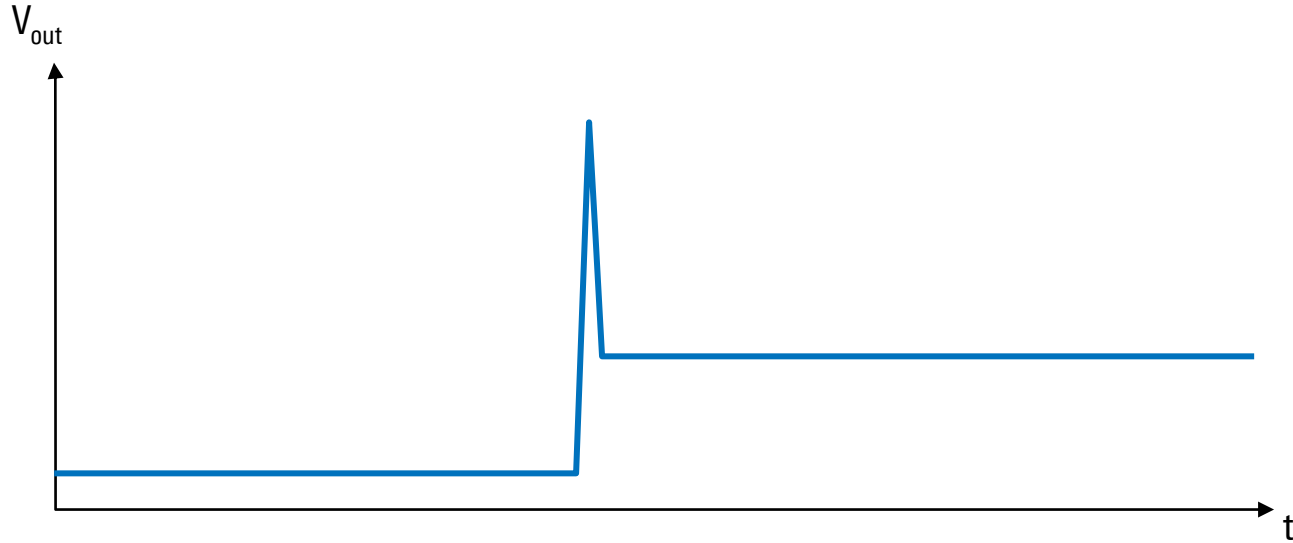


EXAMPLE RAMP OUTPUT



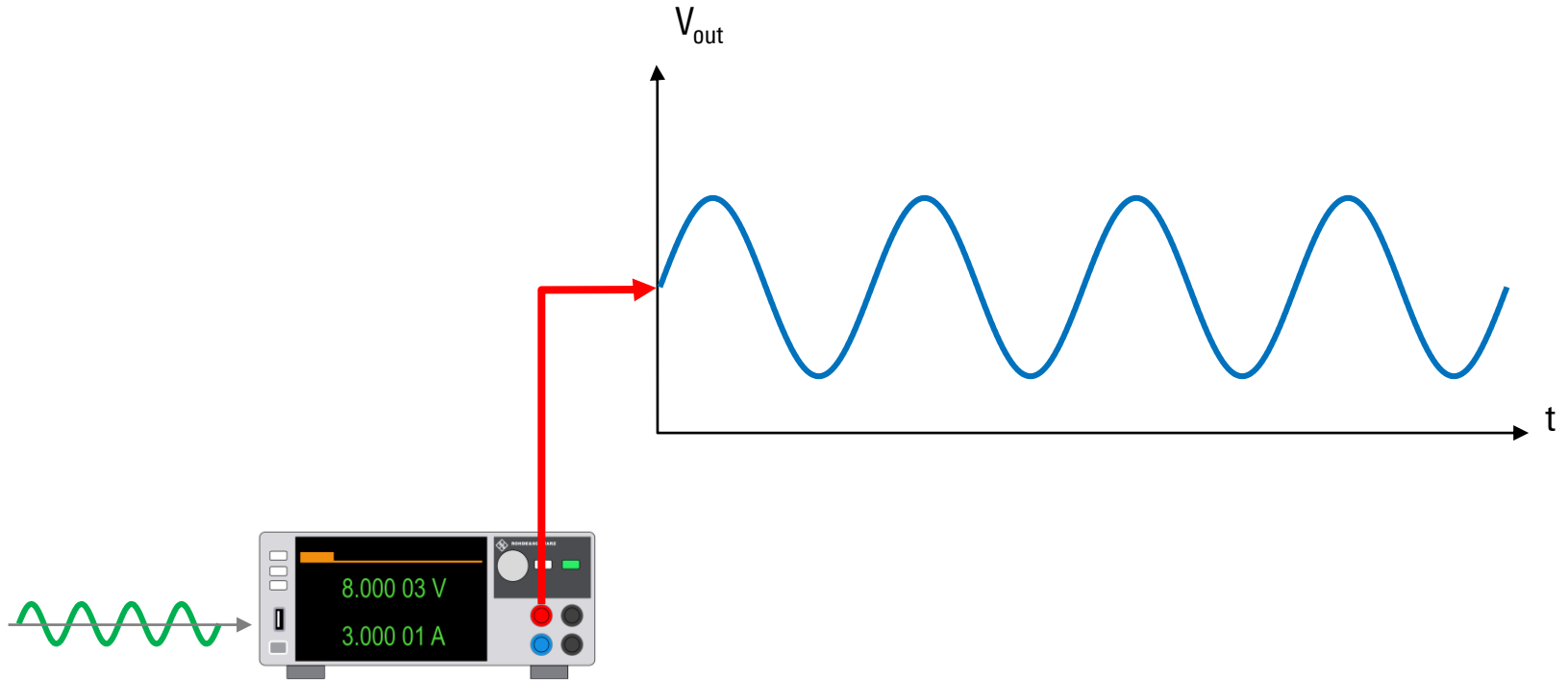
Ramp time	Ramp level
100 ms	5 V

EXAMPLE ARBITRARY OUTPUT



Voltage	Current	Duration
3.300 V	1.000 A	3.000 s
9.000 V	0.400 A	0.200 s
5.000 V	1.000 A	4.000 s

EXAMPLE ANALOG / MODULATION INPUT



READBACK

9.190 30V

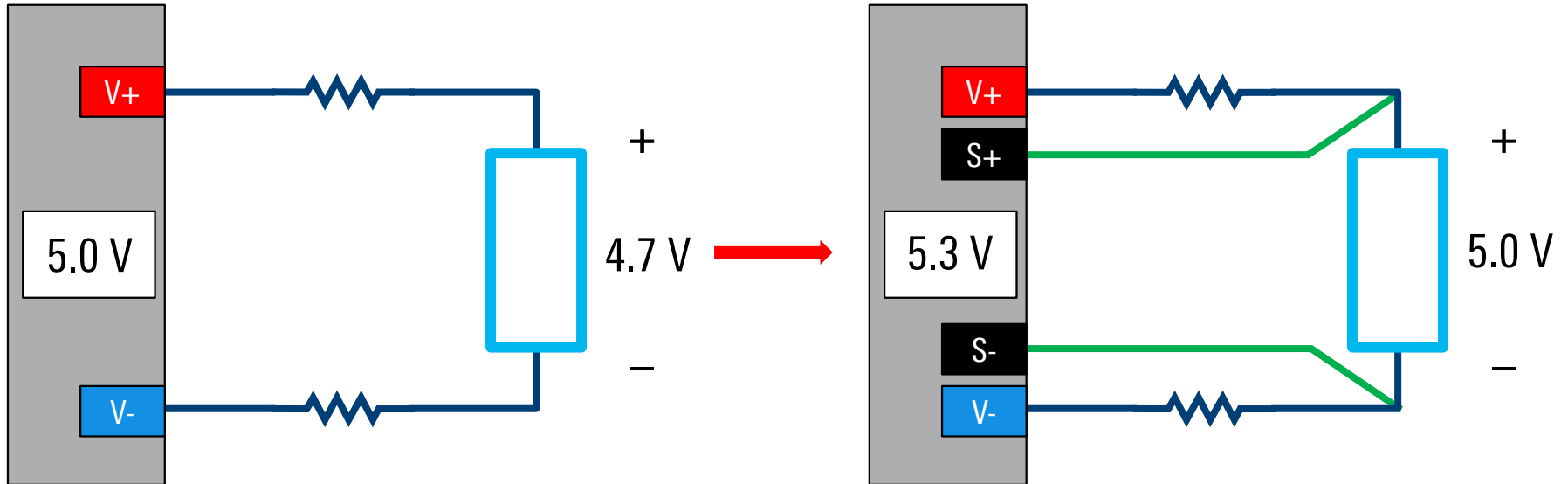
9.190 V

0.230 80 A

1.000 A



REMOTE SENSE



PROTECTION FUNCTIONS



Excessive Voltage Protection



Excessive Current Protection

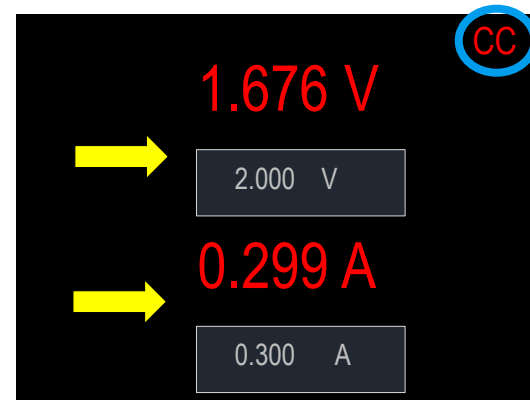


Excessive Power Protection

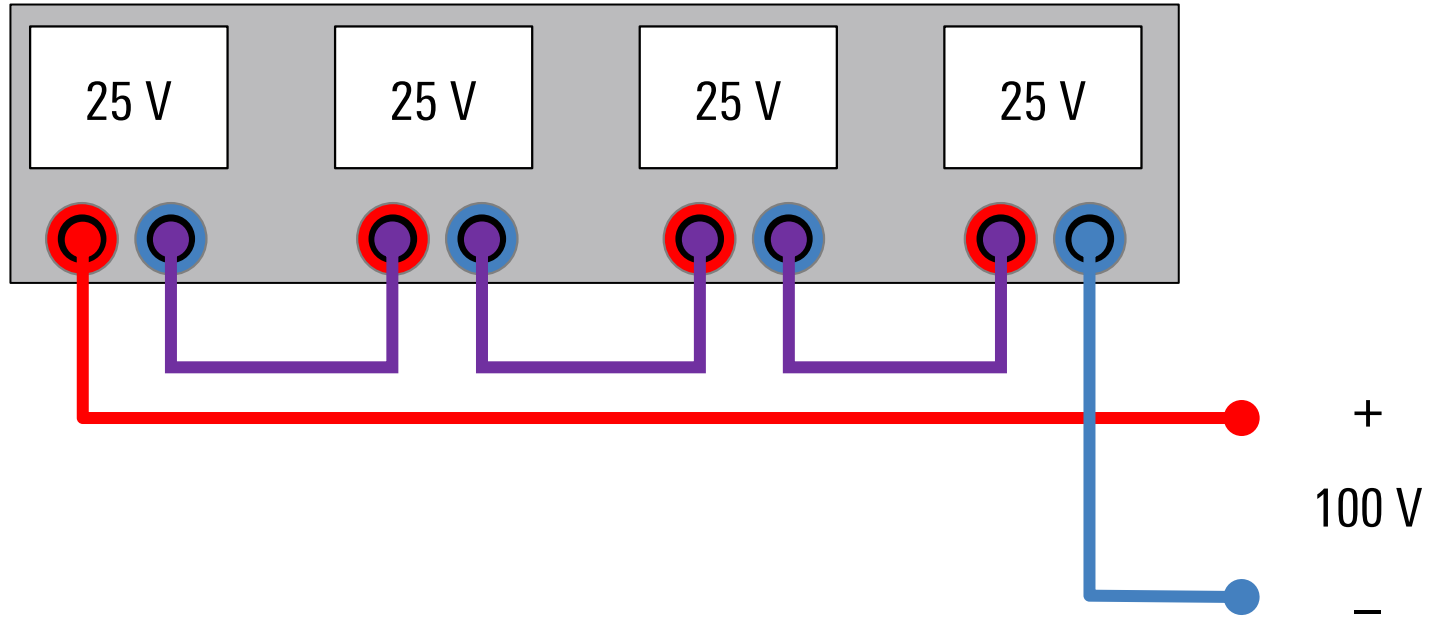


Over-Temperature Protection

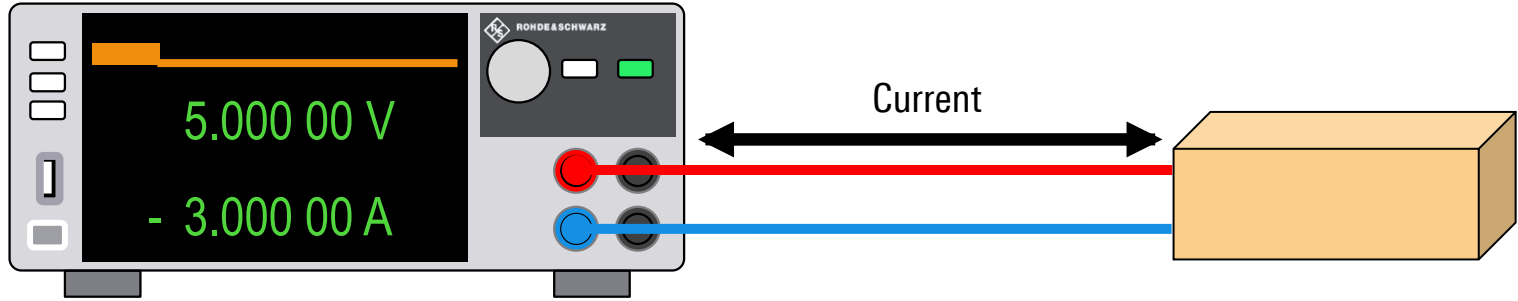
CONSTANT CURRENT & CONSTANT VOLTAGE



SERIES OPERATION



SINK MODE



BATTERY SIMULATION

