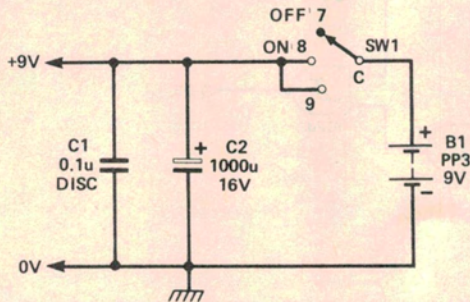
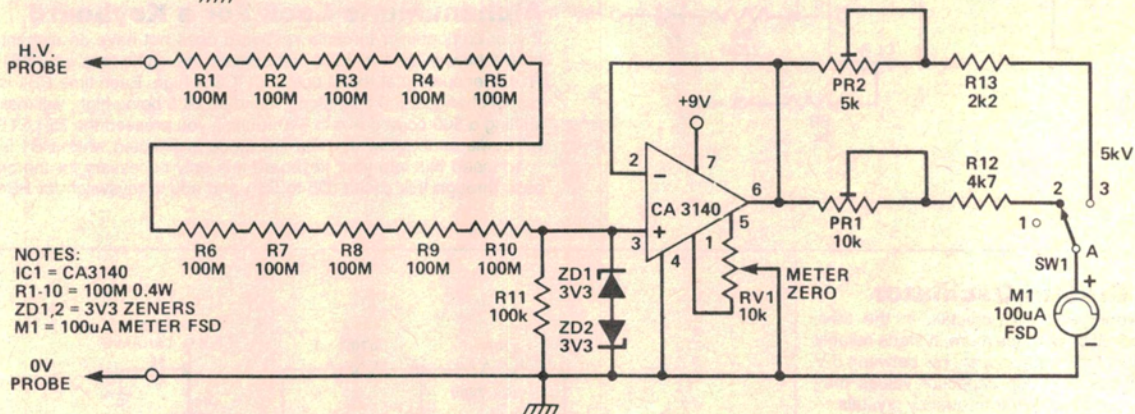


MEASUREMENT



EHT Meter

This simple dc meter circuit will read 0-5 kV and 0-10 kV. A high impedance input op-amp is used as a meter amplifier, driving a 100 μ A moving coil meter calibrated 0-5 and 0-10 to read kilovolts. The input divider comprises a 1000M resistor, made up of 10 x 100M resistors or a 1000M EHT probe, and a 100k resistor. These should be 5% types at least, preferably 2% types. A Class 2 or Class 2.5 (common type) meter movement should be used which will provide 2% or 2.5% full-scale accuracy. The resistive divider need not be any more accurate. The two zeners on the input provide over-voltage protection. Calibration is simple. Short the input and adjust RV1 to zero the meter. To calibrate the 10 kV range, set SW1 to 2 then apply 1.00 volts across R11 and adjust PR1 so the meter reads full scale. For 5 kV, set SW1 to 3 then apply 0.50 volts across R11 and adjust PR2 to read full scale on the meter. Resistors R1 to R10 should be mounted in a 'string' and covered in heatshrink tubing to prevent arc-over between their ends at peak voltage. Use 1/2W or 1W resistors for their voltage rating.



NOTES:

- IC1 = CA3140
- R1-10 = 100M 0.4W
- ZD1,2 = 3V3 ZENERS
- M1 = 100uA METER FSD