

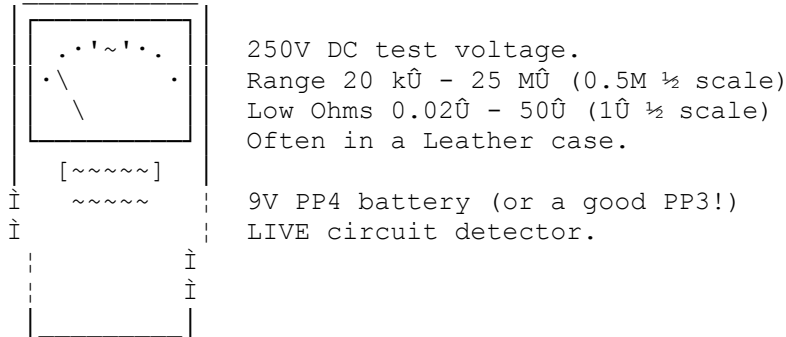
EdgcumePeebles Megger & Low R

By G8MNY

(New Jan 08)

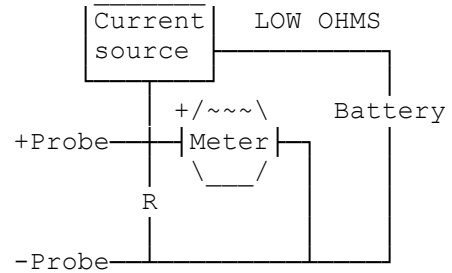
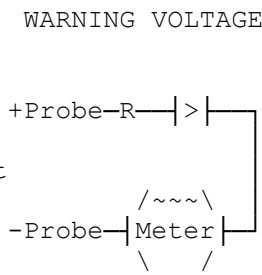
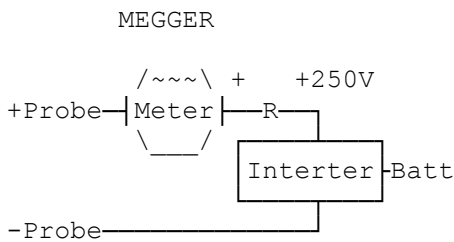
(8 Bit ASCII Graphics use code page 473 or 850)

This is an old tester the engineers used to use for testing wiring (e.g. telephone).



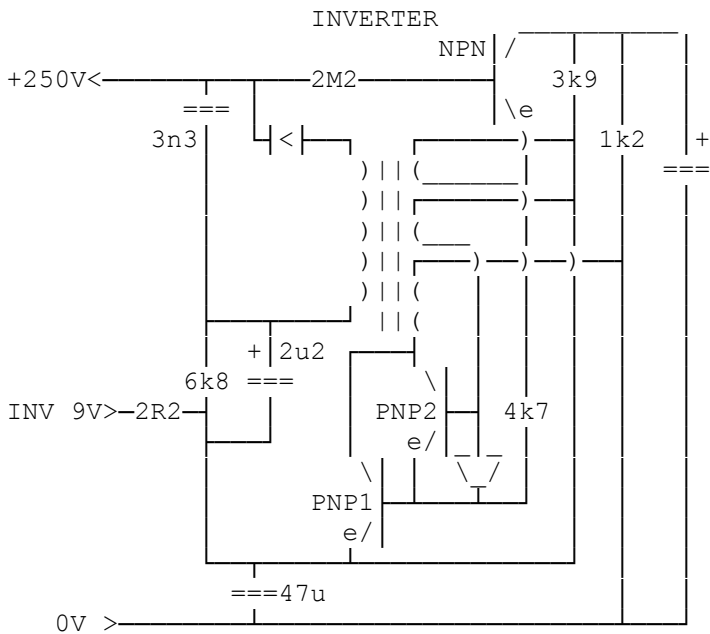
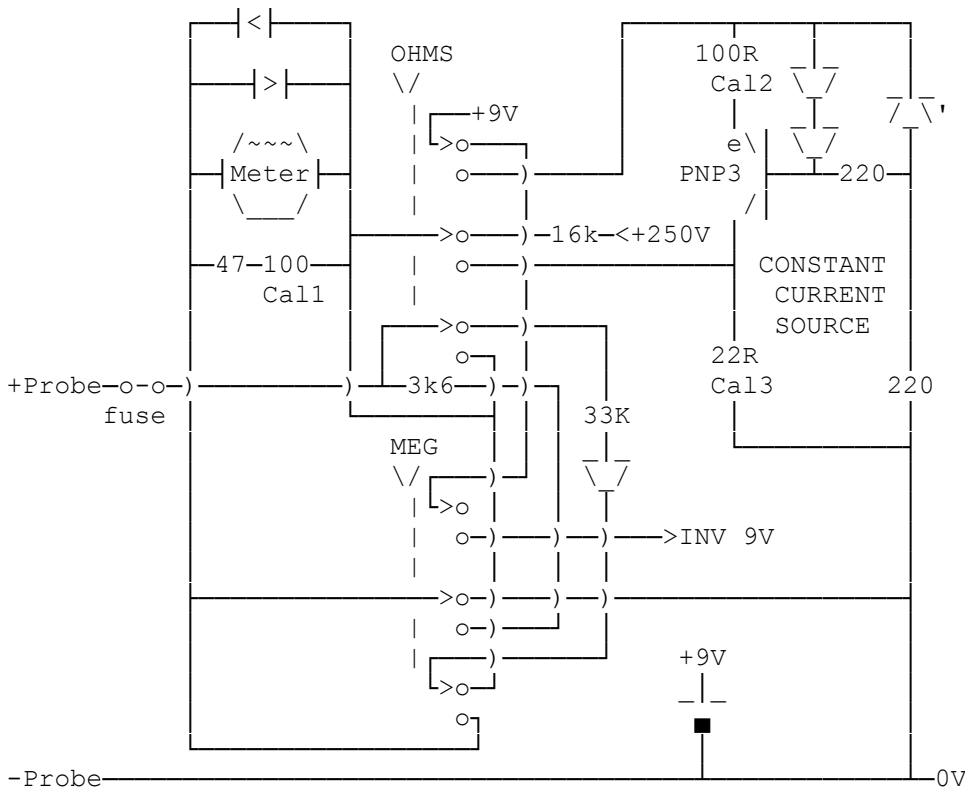
PRINCIPLES

The meter uses an inverter to provide the 250V megger supply. In the idle push button position there is an uncalibrated warning meter mode. The low ohms uses a reverse current bridge circuit.



METER CIRCUIT

The circuit is made quite complex due to the switching around the 3 modes.



CIRCUIT OPERATION

With the rocker switch idle the meter is connected to the probes via 33k & a diode, so it warns of AC or +ve voltages connected, as well as providing a discharge path to any voltage stored on the cable under test from meggering.

Pressing the MÛ button puts 9V into the inverter, the 2 Darlington connected PNPs with the transformer form the inverter oscillator. The secondary is rectified to provide the output DC voltage, which also turns on the NPN to provide a voltage control feedback. The NPN turning on, takes base drive current from PNP1 completing the control loop.

The 250V feeds an 18k to the meter to the +probe, a 3k6 in is the -probe lead. Calibration is provided with Cal1 preset across the meter to set Zero & mid scale ohms.

Pressing the Û button puts 9V into the constant current source consisting of 2 voltage limiters on the supply a zener & then 2 diodes, feeding the PNP base giving exactly 0.6V across its emitter resistor Cal2 & hence constant current from the collector. Cal2 sets the current which gives the full meter indication on no load. The mid scale calibration (@10R) is done with Cal3 preset that takes half the supply current at mid scale.

N.B. Calibration must be done in Cal1 Cal2 Cal3 order!

MODIFICATION

I have modified mine to give 550V for mains wiring MEGGER testing. To do that I added a diode & cap to make voltage doubler on the secondary, & then changed the 16k for a 121k to keep it all calibrated.

Why don't U send an interesting bul?

73 de John G8MNY @ GB7CIP