MILLIOHMMETER OM I

BRIEF OPERATION AND ADJUSTMENT INSTRUCTIONS

Measurements to be made with constant current:

Range 2 Ohm - 50 μA_{RMS}

Range 200 mOhm - 500 μA_{RMS}

Range 20 mOhm - 5 mA_{RMS}

Range 2 mOhm - 50 mA_{RMS}

Measuring frequency: 1 kHz ± max. 2%

Measuring voltage: 10 μV_{RMS} - 100 μV_{RMS}

Max. no-load voltage: 12 mV_{RMS} & 12 mV_{DC}

Trafo for OM 1 → 8013207
(standard model)

ACCURACY (+ 10 to + 50 degrees Centigrades)

Range:

20 mOhm - 200 mOhm - 2 Ohm

± 3% of reading

± 1 digit

Range:

2 mOhm

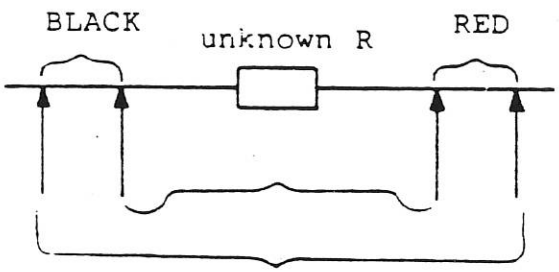
± 3% of reading

± 1 digit

0.01 mOhm Max. reading added

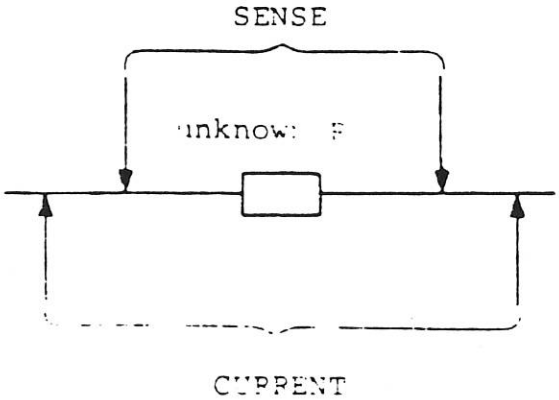
Measurement:

Example in 200 mOhm + 2 Ohm ranges



Important thing in the 20 mOhm + 2 mOhm ranges!

The current leads must be turned away from the sense leads, as shown in below diagram:



ADJUSTMENT INSTRUCTIONS:

The following resistance ratios are available:

1.008 Ohm ± 0.5 %

121.1 mOhm ± 0.5 %

17.63 mOhm ± 0.55%

1.535 mOhm ± 1.0 %

1. Let the two sense leads remain open and short-circuit the two current leads.

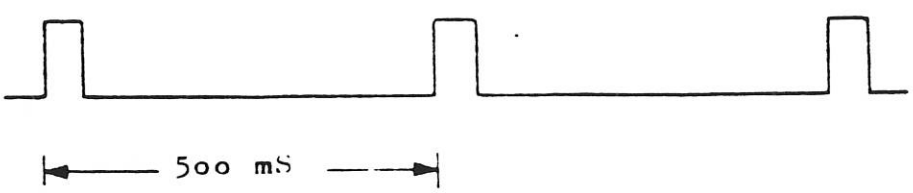
2. Check that the ocsillator is oscillating, 1 kHz approx. $5V_{RMS}$, as measured in point A.

3. Adjust point A to 0 V_{DC} with P_8 with all four leads open, and re-short-circuit the two current leads.

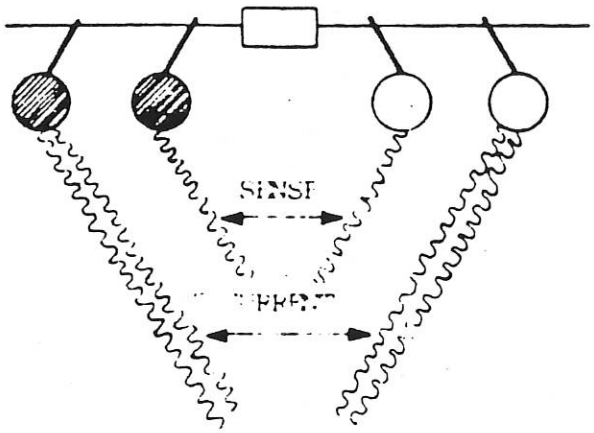
4. Adjust point D to 0 V_{DC} with P_7.

5. Adjust U_g gate of U1897 with P_1 to -1.5 V. The oscillator must then still be yielding approx. 5 V_{RMS}.

6. Adjust "Sample rate" to 500 mS with P_6:



7. Connect 1.008 Ohm as follows:



Adjust the filter of the measuring amplifier to max. with P_2 as measured in point B.

8. Remove the two sense leads and let them remain open. Adjust "Analog output to DVM" to 0 V with P_4.

9. Re-join the two sense leads as shown in item 7. Adjust "Analog outout to DVM" to 1.008 V_{DC} with P_3.

10. Then adjust the reading to 1.008 Ohm with P_5.

11. Remove all 4 leads and let them remain open.
Now the measuring range has to be 2 mOhm. Check that the no-load voltage across the two current leads does not exceed: 12 mV_{RMS} and 12 mV_{DC}.

12. Now make a range check with the three remaining resistors. They should be within $\pm$ 3% of the reading with self-tolerance of the resistors considered.