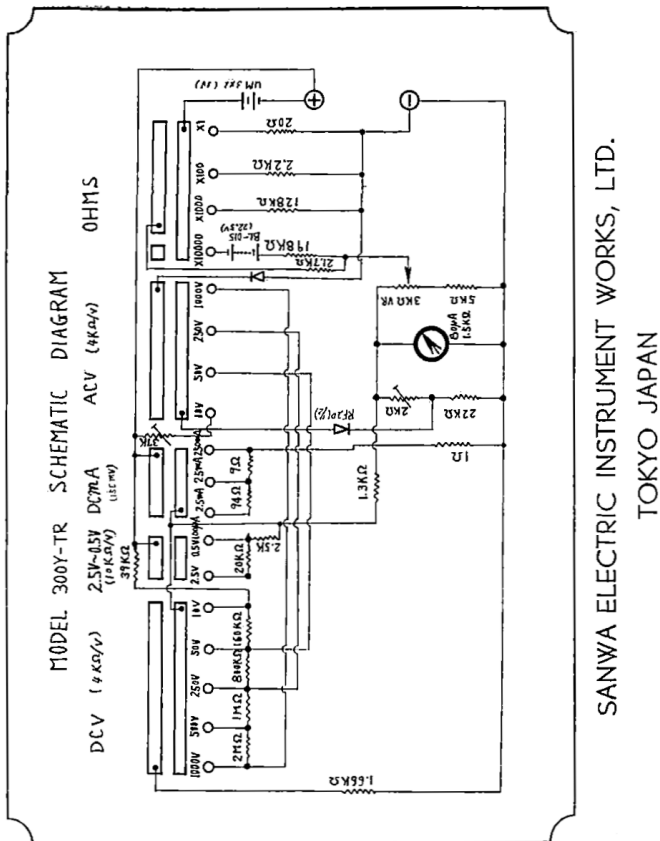


1. The meter equipped is of high sensitivity of $100\mu A$, and DC low voltage ranges work at $10k\Omega/V$ and at $4k\Omega/V$ for $10V$ and higher ranges, respectively.
2. The meter is fitted obliquely to facilitate reading while in use.
3. All ranges are controlled by a rotary switch to do away with the trouble of shifting the test prod at each measurement.
4. For its portability, the instrument has a wide range of measurement. Spacious rectangular window and light scale face makes reading easy.
5. Resistance is measurable of up to $20M\Omega$ through the internal batteries. $R \times 10000$ range is provided to measure high resistance of up to $20M\Omega$.

Range of Measurement.

DC/V:	0.25V 2.5V (10K Ω /V)
AC/V:	10V 50V 250V 500V 1000V (4K Ω /V)
AF/V:	10V 50V 250V (0.1 μ F condenser in series)
DC/A:	100 μ A (150mV)
DC/mA:	2.5mA 25mA (250mV)
dB:	0dB $\sim$ +22dB at AC/10V range (0dB-0.775V)
Ohm:	Range R $\times$ 1000 R $\times$ 100 R $\times$ 10 Center 200K Ω 20K Ω 2K Ω 20 Ω LI 140 μ A 1.4mA 140mA
μ F & H:	0.001 μ F $\sim$ 0.3 μ F 20H $\sim$ 1000H
Battery:	Internal 1.5V (UM-3) $\times$ 2 22.5V $\times$ 1
Size:	148 $\times$ 95 $\times$ 63mm
Weight:	582gr

Size : 148×95×63mm
Weight : 582gr



Instructions for Use.

1. The test prods are inserted into + and — terminals on the bottom of the face panel. In measuring output voltage, however, when AC/V is measured by cutting off DC, — side prod is shifted to OUT(—) terminal. Peak voltage of the internal condenser being 1000V, lower ranges than 250V should be used.
2. Measurement of μF and H: The rotary switch in the center is set at AC/10V range. One pole of AC/10V external source is connected to + terminal and the other to one of the test prods. A condenser or a coil to be measured is connected between that prod and — terminal of the tester to read the indication of the meter.
The scale is graduated in both ways for 50 and 60 cycles to be read according to the cycle of the AC/10V source. To ensure accurate measurement, AC/10V source to be supplied externally is checked and adjusted on AC/10V range of the tester to indicate the prescribed voltage at full scale.
3. $R \times 10000$ range: As shown on the diagram, this range measures resistance of up to $20\text{M}\Omega$. The top Ω scale is read and each value obtained is multiplied by 10,000 (center- $200\text{K}\Omega$).
0-position will shift a little from that on $R \times 1000$ or lower ranges and it needs re-adjustment.
4. Measurement of db: db value is read direct on AC/10V range from 0db up to + 22db.
5. AC/V scale: AC 10V ONLY scale, third from top, is exclusively used for measurement of AC/10V and under. For 50V and up, DC/V scale is used in common.
6. LI scale: The explanation leaflet attached is referred to for the details.
In the inspection of a diode or a transistor of its resistance on $R \times 1000$ range, its value is obtained on the top scale; the current then running on the resistance ($0 \sim 140\mu\text{A}$), on the second green LI scale; and, at the same time, the voltage value ($0.5\text{V} \sim 3\text{V}$) at both ends of the resistance, on the LOAD VOLT scale, but the value of current is known by multiplying the reading by 10 ($0 \sim 1.3\text{mA}$) on $R \times 100$ range, and by 1,000 ($0 \sim 140\text{mA}$) on $R \times 1$ range.
7. Measurement on $R \times 1$ range: On $R \times 1$ range, current consumption is about 150mA when shorted and about 75mA when a resistance of 20Ω is measured. Therefore, such small resistance should be measured in as short a time as possible to avoid the test piece to be heated by excessive current or be burnt off.
8. DC/ $0.5\text{V} \sim 2.5\text{V}$ work at high sensitivity of $10\text{K}\Omega/\text{v}$ rendering the instrument specially suitable to inspect the collector voltage of transistor circuits. For P-n-P type transistors, — side prod is applied to the collector side, while for n-P-n type + side is applied to the collector side.
Actual value is obtained on the output stage as there runs much I_c , but on a circuit where I_c is $100\mu\text{A}$ or thereabouts, there will be a little smaller value given, for more current is diverted to the meter.
9. DC/ $100\mu\text{A}$ range: This range is used to measure bias current and I_c on the initial stage where the value of I_c is small. 2.5mA or 25mA range is used to measure I_c in other cases.
The tester is always put in series cutting off the circuit, though approximate value is known by putting a current range in parallel to both ends of the load transformer or the resistance thereof. I_c on a self-bias circuit, however, can not be measured in this way, for the working condition of the circuit changes with its V_c resulting in increased I_c .

CAUTION

1. Before each application, the range to use must be confirmed. If voltage is measured on an ohm range, or voltage is given to a current range, by mistake, the shunt in the circuit will be burnt off or the rectifier be deteriorated, damaging, in most cases, the meter itself.
2. When measuring voltage or current of which the approximate value is not ascertained, it must first be checked on the highest range to know it.
3. The meter used is of high sensitivity. Though special attention is paid to make it robust to ensure shock-proof, utmost care must be taken in handling the instrument not to give it excessive shock or vibration.
4. If 0Ω adjustment is impossible on $R \times 1$ range, the internal batteries need replacement. Note polarity when they are replaced with fresh ones.
5. Do not expose the instrument in extremely high temperature or moisture.