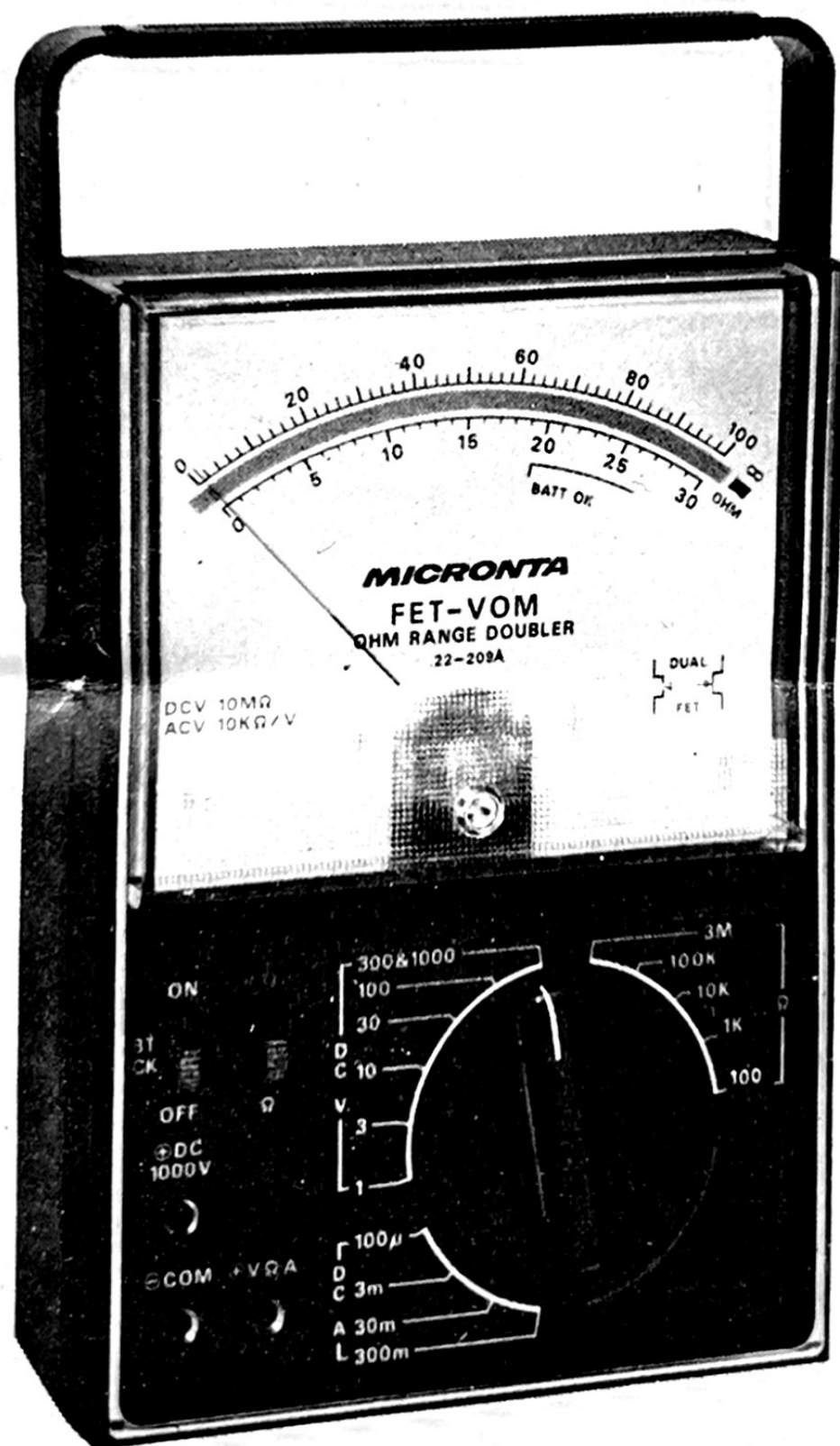


MICRONTA®

FET—VOM

INSTRUCTION MANUAL



Catalog Number 22-209A

CUSTOM MANUFACTURED FOR

RADIO SHACK  A DIVISION OF TANDY CORPORATION

Your MICRONTA FET VOM has all the advantages of a VTVM, with the portability of a VOM. A dual-Field Effect Transistor provides the high input impedance, with circuit stability that rivals the finest VTVM.

- Power is provided by a standard 9-volt rectangular type battery for the FET Amplifier and Resistance measuring circuit.
- Ranges are set up as convenient multiples of 1 and 3.
- A unique feature of this FET VOM is that it has only two meter scales — both of which are linear. This makes it extra-easy to make any reading. The resistance "range doubling" system results in 10 ranges of resistance measurements, including a low-ohm full-scale range of 30Ω .
- A front panel Battery Check switch assures accurate readings because you know when the 9-volt battery is beginning to weaken.
- 47" (120 cm) well-insulated test leads with banana-type plugs result in firm, safe, low-resistance circuit connections.
- 4¼" (10.8 cm) meter incorporates a mirrored scale to eliminate parallax reading errors.

Your FET VOM is ideally suited for service, engineering, lab, hobby or class-room use — rugged in construction — portable and accurate. The meter movement is automatically protected from excess circuit current/voltage damage.

SPECIFICATIONS:

DC VOLTAGE :	7 Ranges	1-3-10-30-100-300-1000V
Input impedance		10 megohm (1000V range is 33.3 megohms)
Accuracy		±3% full scale
AC VOLTAGE :	5 Ranges	10-30-100-300-1000V
Input impedance		10K Ω /volt
Accuracy		±4% full scale
DC CURRENT :	4 Ranges	100 μ -3m-30m-300mA
Terminal Voltage		300mV
Accuracy		±3% full scale
RESISTANCE :	10 Ranges	30-100-300-1K-3K-10K-30K-100K-1M-3M Ω
Accuracy		±3% full scale
ACCESSORIES		
Test Leads		47" (120cm), banana plug style
POWER :	Requires one 9-volt rectangular type battery	

BEFORE YOU USE YOUR FET VOM

- Remove the case back and install the battery; take care to observe proper polarity as indicated in the battery compartment. Replace the case back.
- Check meter zero balance when you first turn the FET VOM "on". If the pointer does not normally rest exactly over the 0's at the left side of the scale, adjust the plastic screw in the lower center of the meter face to bring the needle to "0" (function/range switch **not** set to Ω).
- Check condition of the 9-volt battery by using the Battery Check position; as long as the pointer gives an indication up to the "BATT OK" point on the meter, the 9-volt battery is OK. If reading is below that point, replace the 9-volt battery. We recommend Radio Shack's. Catalog Number 23-583, or 23-553 for extra-long-life.
- For most accurate readings, keep the meter laying flat on a non-metallic surface. Also, use a Range position that results in a meter reading in the upper 1/3rd of the meter scale.
- Always observe correct test lead polarity when making DC measurements.
- Exercise extreme caution when measuring voltages of 150 and above.
- When not in use, or when moving your Instrument, leave ON/OFF switch in the OFF position.

USING YOUR FET VOM

DC VOLTAGE MEASUREMENTS

1. Plug the test leads into the correct jacks — Black into $\ominus$ COM and Red into $\oplus$ V $\cdot$ Ω $\cdot$ A.
2. Set Range Selector to one of the DCV positions; it is best to start at the top and work down.
3. Connect the test probe tips to the circuit under test; be sure to observe correct polarity.
4. Set Range Selector as required to obtain a meter reading in the upper 1/3rd of the meter scale.
5. For voltages between 300 and 1000 volts, plug the Red test lead into the 1000V DC jack. Use extreme care when using this high-voltage range.

Note: The 1000V DC jack is for use only with DC voltages of 300 to 1000 volts.

AC VOLTAGE MEASUREMENTS

1. Plug the test leads into the correct jacks — Black into $\ominus$ COM and Red into $\oplus$ V $\cdot$ Ω $\cdot$ A.
2. Set Range Selector to one of the ACV positions; it is best to start at the top and work down.
3. Connect the test probe tips to the circuit under test.
4. Set Range Selector as required to give a meter reading in the upper 1/3rd of the meter scale.
5. Use extreme care when using 300 and 1000 Voltage Ranges.

DC CURRENT MEASUREMENTS

1. Plug the test leads into the correct jacks — Black into $\ominus$ COM and Red into $\oplus$ V $\cdot$ Ω $\cdot$ A.
2. Set Range Selector to the 300 m position.
3. Open up the circuit in which you want to measure current and connect the Black test probe to the negative side and the Red to the positive side of the circuit.
4. Apply power to the circuit under test. Set Range Selector to a position which will give a meter reading in the upper 1/3rd of the scale.

Note: Do not attempt to read AC current.

RESISTANCE MEASUREMENTS

Before taking any resistance measurements, disconnect power to the unit under test and discharge capacitors. It is best to remove batteries and unplug line cords.

Note: The resistance measurement circuitry uses a standard low-ohms technique which results in a full-scale reading whenever the FET VOM is on and you are set to an Ω range with no resistance connected to the test leads. At first this may seem a little unusual, but soon you will take it for granted. Just a word of caution; to conserve battery power, don't leave the meter "on" and in the resistance measurement function.

1. Plug the test leads into the proper jacks — Black to $\ominus$ COM and Red to $\oplus$ V $\cdot$ Ω $\cdot$ A.
2. Set Range Selector to one of the Ω positions.
3. Set Range Selector as required to give a meter reading in the upper 1/3rd of the meter scale. Or, set ohms range doubler switch to red Ω position.
4. Now, connect the probe tips across the circuit or part under test. When measuring resistance, it is best to disconnect one side of the part under test (thus the remainder of the circuit will not interfere with the reading).

When you set the ohms range doubler switch to the red Ω position, refer to the red labeling on the Range Selector switch (so you are sure to read the correct meter scale).

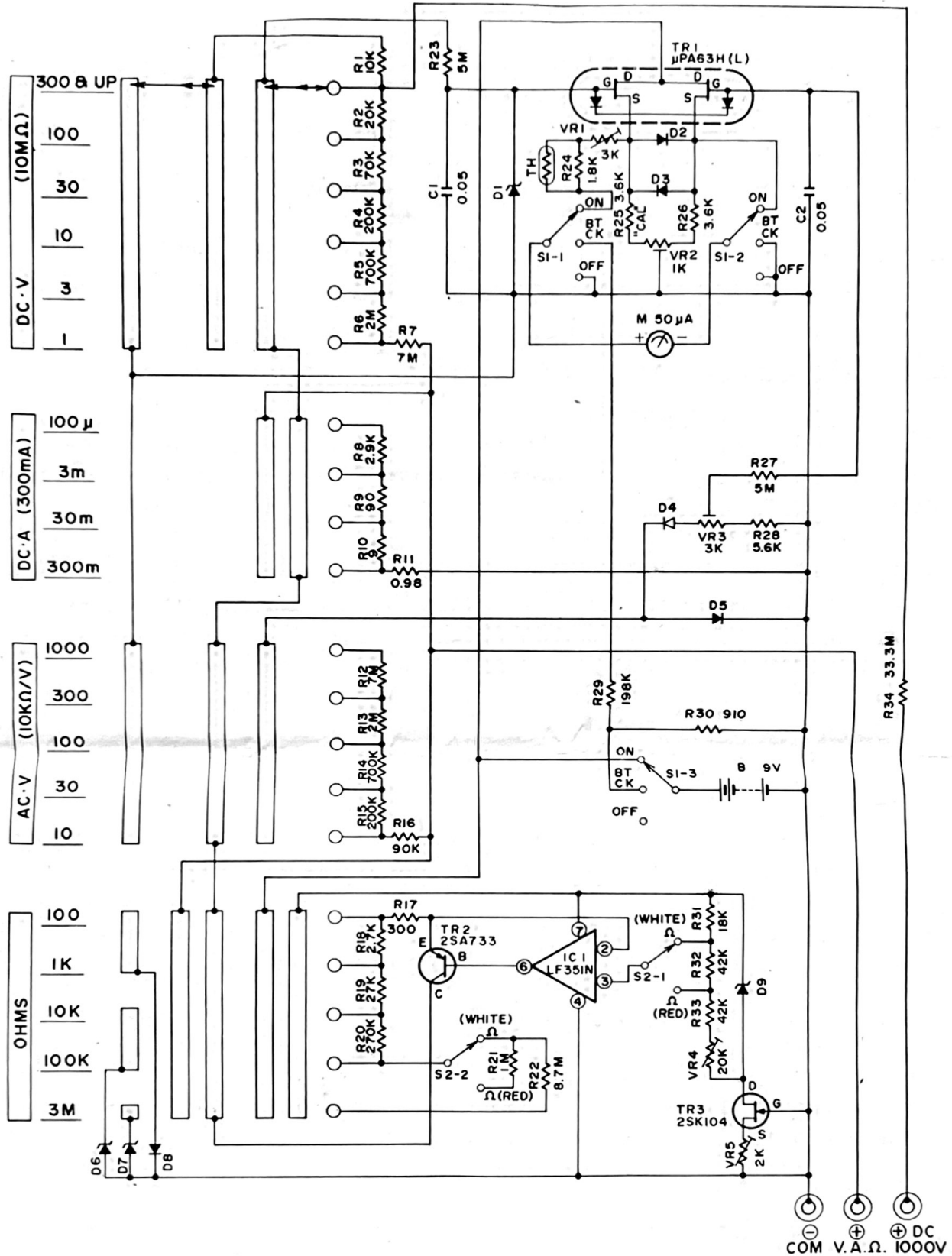
For additional ideas and information on how to use your Instrument, we suggest you obtain a copy of Radio Shack's book REALISTIC GUIDE TO VOM'S AND VTVM'S.

MAINTENANCE

Your FET VOM is ruggedly constructed and the meter movement is automatically protected from voltage or current overloads. Thus, your Instrument should require little or no service or repair — providing you treat it with a normal amount of respect. Don't subject your unit to excessive shock or measuring abuse.

Periodically check the condition of the 9-volt battery. When using the BT. CK switch, the meter pointer should read above the BATT. OK line. If not, replace the 9-volt battery. We recommend Radio Shack's Catalog Number 23-553 for extra-long-life.

SCHEMATIC DIAGRAM



Note:

Resistance values are indicated in ohms unless otherwise specified (K = 1,000 ohms and M = megohms). Capacitance values are shown in microfarads unless otherwise noted (P = micro-microfarads).

RADIO SHACK LIMITED WARRANTY

This equipment is warranted against defects for 90 days from date of purchase. Within this period, we will repair it without charge for parts and labor. Simply **bring your sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover equipment subjected to misuse or accidental damage.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

We Service What We Sell

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