

MODEL 215 AND MODEL 260  
AC-DC VOLT OHM MILLIAMETER  
OPERATING INSTRUCTIONS

1. GENERAL - The Model 215 or the Model 260 Test Unit offers the serviceman a small, compact and complete instrument with high sensitivity for testing and locating trouble in all types of circuits. The large four and one half inch meter provides a long scale that is easy to read and the compact arrangement of the control units allows the overall size of the bakelite housing to be comparatively small for maximum portability.

The electrical circuit is designed to give maximum insurance against inaccuracy and damage to the component parts. Impregnated cable wiring is used throughout. The high grade copper-oxide rectifier for A.C. measurements is individually calibrated with a precision wire bound shunt and multiplier. All metallized resistors are matched in pairs to close tolerance for accuracy and are firmly held in place on a special bakelite plate machined for this purpose. The entire assembly is truly rugged and can well withstand the wear and tear of the service work for which it is designed.

2. DC VOLTS - Place the DC-AC-Output switch in the D.C. position. Rotate the range selector switch to any of the five ranges required. Plug the test leads in the two jacks marked "POS." and "NEG.", inserting the red lead in the red or "POS." jack and the black lead in the black or "NEG." jack. This applies to the checking of all ranges with the exception of the 5,000 volt range. For the checking of the 5,000 volt range set the selector switch at the 1000 V position and insert the red lead in the 5,000 V.D.C. jack and the black lead in the "NEG." jack. Read the voltage on the black second top arc on the scale marked D.C. For the 2.5 volt range, use the 0 to 250 figures and divide by 100. For the 1,000 volt range, use the 0 to 10 figures and multiply by 100. For the 5,000 volt range, use the 0 to 50 figures and multiply by 100.

CAUTION: - Due to danger always present when testing high voltages, we recommend that the leads be clipped on and the connections made before turning on the power supply.

3. A.C. VOLTS - Place the DC-AC-Output switch in the A.C. position. Rotate the range selector switch to any of the five ranges required. Plug the test leads in the two jacks marked "POS." and "NEG.", inserting the red lead in the red or "POS." jack and the black lead in the black or "NEG." jack. This applies to the checking of all ranges with the exception of the 5,000 volt range. For the checking of the 5,000 volt range set the selector switch at the 1,000 V position and insert the red lead in the 5,000 V.A.C. jack and the black lead in the "NEG." jack. Read the voltage for the 2.5 volt range on the lower red arc marked "2.5 V.A.C. only." For the other ranges use the upper red arc marked A.C. For the 1,000 volt range, use the 0 to 10 figures and multiply by 100. For the 5,000 volt range, use the 0 to 50 figures and multiply by 100.

CAUTION: - Due to the danger always present when testing high voltages we recommend that the leads be clipped on and the connections made before turning on the power supply.

4. OUTPUT METER - Make connections as for measuring A.C. volts in 3, except place the DC-AC-OUTPUT switch in the OUTPUT position. A condenser is connected in series with this switch for blocking out the D.C. compo-

ment when connections are made directly at the plate.

5. D.C. MILLIAMETER - Place the DC-AC-OUTPUT switch in the D.C. position. Rotate the range selector switch to any of the four ranges required. Plug the test leads in the two jacks marked "POS." and "NEG.", inserting the red lead in the red or "POS." jack and the black lead in the black or "NEG." jack. Read the current on the black second top arc on the scale marked D.C. for the 500 M.A. range use the 0 to 50 figures and multiply by 10. For MODEL 260, read the 100 MICROAMPERES on the 0 to 10 figures and multiply by 10.

6. OHMS - Place the DC-AC-OUTPUT switch in the D.C. position. Rotate the range selector switch to any of the three ranges required. Plug the test leads in the two jacks marked "POS." and "NEG." Short the test leads and set the pointer to "0" by rotating the ZERO OHMS knob. Read ohms on the top arc using the multiplying factor indicated by the switch position.

7. DECIBELS - Power level indicators find their greatest application in P.A. and telephone work. It is difficult to use them in testing a radio set since the loads are variable and constant impedance transformers would have to be substituted in the output circuit. For radio service work the output meter described in 4 is generally used. The output meter can be used across different loads and a reference chart used to convert the readings in volts to power level decibels.

The most commonly used reference level of .006 watt in a load of 500 ohms impedance is the basic calibration of the D.B. meter in the Model 215. When a .006 watt signal is dissipated in a load of 500 ohms, a voltage of 1.73 volts is developed across the load and it is at this point on the dial that the zero is placed.

Set the DC-AC-OUTPUT switch in the A.C. position. Rotate the range selector switch to any of the five ranges required. Plug the test leads in the two jacks marked "POS." and "NEG." Read decibels on the black arc at the bottom of the scale marked D.B. When reading decibels, add algebraically to the scale indications the numbers indicated at setting of the range selector switch. For example, if the scale indication is -4DB with the switch at + 12DB, the true reading will be + 8DB.

8. BATTERIES - A Burgess No. 1 uni-cell of 1.5 volts and two Burgess No. 422 batteries of 3 volts are mounted inside the testor for ohmmeter measurements. When it is no longer possible to bring the pointer to "0" on the R and Rx100 ohm ranges with the test leads shorted, the 1.5 volt battery should be replaced. If this adjustment is no longer possible on the Model 215, Rx1000 or Model 260, Rx10,000 scale, the two 3 volt batteries should be replaced. To replace the batteries, remove the four corner panel screws and lift the complete panel out of the case.

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Courtesy of :  
Simpson260.com

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