

*Simpson*

**Model 372  
Series 3 Ohmmeter  
INSTRUCTION MANUAL**



**SIMPSON ELECTRIC COMPANY**  
520 Simpson Avenue, Lac Du Flambeau, WI  
(715) 588-3311 FAX (715) 588-3326  
[www.simpsonelectric.com](http://www.simpsonelectric.com)

**About this Manual**

To the best of our knowledge and at the time written, the information contained in this document is technically correct and the procedures accurate and adequate to operate this instrument in compliance with its original advertised specifications.

**Notes and Safety Information**

This Operator's Manual contains warning headings which alert the user to check for hazardous conditions. These appear throughout this manual where applicable and are defined below. To ensure the safety of operating performance of this instrument, these instructions must be adhered to.



Warning, refer to accompanying documents.



Caution, risk of electric shock.

**Technical Assistance**

SIMPSON ELECTRIC COMPANY offers assistance Monday through Friday, 8:00 am to 4:30 pm Central Time. Contact Technical Support or Customer Service at (715) 588-3311 or visit our website at <http://www.simpsonelectric.com>

**Warranty and Returns**

SIMPSON ELECTRIC COMPANY warrants each instrument and other articles manufactured by it to be free from defects in material and workmanship under normal use and service, its obligation under this warranty being limited to making good at its factory or other article of equipment which shall within one (1) year after delivery of such instrument or other article of equipment to the original purchaser be returned intact to it, or to one of its authorized service centers, with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on its part, and SIMPSON ELECTRIC COMPANY neither assumes nor authorizes any other persons to assume for it any other liability in connection with the sales of its products.

This warranty shall not apply to any instrument or other article of equipment which shall have been repaired or altered outside the SIMPSON ELECTRIC COMPANY factory or authorized service centers, nor which has been subject to misuse, negligence or accident, incorrect wiring by others, or installation or use not in accord with instructions furnished by the manufacturer.

This manual represents your meter as manufactured at the time of publication. It assumes standard software. Special versions of software may be fitted, in which case you will be provided with additional details.

The apparatus has been designed and tested in accordance with EN 61010-1, "Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use." This operating guide contains information and warnings that must be followed by the user to ensure safe operation and to maintain the apparatus in a safe condition.

We reserve the right to make changes and improvements to the product without obligation to incorporate these changes and improvements into units previously shipped.

## 4. ZERO ADJUSTMENT

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1. Insert test leads into ohmmeter jacks and short lead tips together.
2. Adjust ZERO OHMS control until the pointer rests over the zero division on the meter scale.

**NOTE:** When the meter can no longer be adjusted to zero on the RX1 through RX1000 ranges, replace the Size "C", 1.5V battery. When the meter can no longer be adjusted to zero on the RX10,000 or RX100,000 ranges, replace 18V battery pack, Simpson Part Number 00840.

## 5. MEASURING THE RESISTANCE

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1. The Model 372 Ohmmeter incorporates two scales.
  - a) The top scale (Black) is used for the 0-500 $\Omega$ , 0-5K $\Omega$ , 0-50K $\Omega$ , 0-500K $\Omega$  ranges. Center Scale values are : 5 $\Omega$ , 50 $\Omega$ , 500 $\Omega$ , 5K $\Omega$  respectively.
  - b) The Bottom Scale (Green) is used for the 0-5 Meg $\Omega$  and 0-50 Meg $\Omega$  ranges. Bottom Center Scale values are 30K $\Omega$  and 300K $\Omega$  respectively.
2. Attach the test leads across the component to be measured. Read value indicated on the meter scale and multiply reading by the appropriate factor for the range selected to obtain the actual resistance.
3. For best results, select the range in order that the attained readings are near mid scale.

**SHOCK HAZARD:** As defined in American National Standard, C39.5, *Safety Requirements for Electrical & Electronic Measuring & Controlling Instrumentation*, a shock hazard shall be considered to exist at any part involving a potential in excess of 30 volts RMS (sine wave) or 42.4 volts DC or peak and where a leakage current from that part to ground exceeds 0.5 milliampere, when measured with an appropriate measuring instrument defined in Section 11.6.1 of ANSI C39.5.

**NOTE:** The proper measuring instrument for the measurement of leakage current consists essentially of a network of a 1500 ohm non-inductive resistor shunted by a 0.15 microfarad capacitor connected between the terminals of the measuring instrument. The leakage current is that portion of the current that flows through the resistor. The Simpson Model 229-Series 2 AC Leakage Current Tester meets the ANSI C39.5 requirements for the measurement of AC leakage current and can be used for this purpose. To measure DC Leakage current, connect a 1500 ohm non-inductive resistor in series with a Simpson 0-500 DC microammeter and use this as the measuring instrument.

## Contents

1. GENERAL DESCRIPTION .....	5
2. INITIAL ADJUSTMENTS.....	5
3. RANGE SELECTION .....	5
4. ZERO ADJUSTMENT .....	6
5. MEASURING THE RESISTANCE .....	6

## 1. GENERAL DESCRIPTION

The Simpson Ohmmeter Model 372 Series 3 is a six range instrument. It measures values from  $0.2\Omega$  to  $50\text{ M}\Omega$  with an accuracy of  $\pm 3\%$  of arc.



For in-circuit measurements, turn off circuit power and discharge capacitors before taking measurements. Small residual voltages can affect accuracy of measurements and greater voltages can damage the Instrument.

Study the circuit under test before making any measurements to determine if the voltage or current supplied by the Model 372 (see Table 3-1) can cause damage or changes in any of the associated components (transistors, diodes, filaments, low voltage capacitors, I.C.'s, etc.).

**DO NOT** use this Instrument to test explosive devices or circuits.

## 2. INITIAL ADJUSTMENTS

1. Place the ohmmeter in the desired operating position with the test leads disconnected.
2. Observe the pointer position, then turn the zero adjust screw on the face of the meter until the pointer rests directly over the division to the right of the infinity ( $\infty$ ) mark on the meter scale. (This is a mechanical adjustment for meter movement zero.)

## 3. RANGE SELECTION

Set the range selector switch to the desired range. For optimal results choose a range for a pointer deflection near center scale. Ranges, center scale readings, maximum test currents, and open circuit voltages are given in the table below for reference.

Table 3-1

Range	Center (Ohms)	Maximum Current (Zero Ohms)	Maximum Voltage (Open Circuit)
RX1	5	340mA	1.5V*
RX10	50	30mA	1.5V*
RX100	500	3mA	1.5V*
RX1000	5 K	0.3mA	1.5V*
RX10K	30 K	0.65mA	21.5V
RX100K	300 K	65 $\mu$ A	21.5V

Zero Ohms adjust control set properly for the above readings

\*Nominal battery voltage of a new battery may be slightly higher