**Specifications**

In the measurement of currents and voltages, and in the operation of the Autolab amplifier, the range and resolution are determined by the specifications of the device. The precision of the measurements is dependent on the accuracy of the instrument, and the range of operation is limited by the specifications and resolution of the device.

**General Description**

The Autolab amplifier is designed for use with DC voltages and currents. It features a high-resolution input channel and a high-impedance output channel. The amplifier is capable of handling a wide range of signals, from low-voltage to high-voltage, and from low-current to high-current applications. The amplifier is designed for use in laboratory and industrial environments, providing accurate and reliable measurements.

**Replacement Parts List**

The replacement parts list includes all the components required for the operation and maintenance of the Autolab amplifier. The list is organized by category, with each component listed with its corresponding part number and description. The list also includes information on the availability of each part, including stock status and delivery time.
Zero-Centre Indication

1. Center the meter with the scale limits during use. ZERO A/D, then move the ZERO A/D control (with no voltage applied) until the meter is centered. After setting the FUNCTION selector to "DC VOLT" and turning the instrument to warm up, if necessary, allow several minutes for the instrument to warm up. Then set the zero at the left-hand zero with the ZERO A/D control. If using the FUNCTION selector at "AC-V," short the INN-PROBE to the ground cable and set the meter pointer at the warm-up period.

DC Voltage Measurement

1. Set the RANGE selector to position "DC-1000, or DC VOLT," depending upon the polarity of the voltage to be measured. Depending upon the position of the meter selector of function selector of other.

2. Set the RANGE selector to position "DC-10".

3. Short the INN-PROBE to the ground cable, and the ground cable to the zero side of the voltage being measured.

4. Set the RANGE selector to position "DC-1000, or DC VOLT," depending upon the polarity of the voltage to be measured. Depending upon the position of the meter selector of function selector of other.

Note: Although the meter is protected against burn-out under ordinary operation, it is still necessary to follow the preceding instructions. The operator is advised to first make a reading at a low range, then gradually increase the range.

Under Maintenance

AC Voltmeter Calibration Sections

AC Voltmeter Calibration Sections

Power Requirements: 100-125 volts AC, 50-60 cps, 10 watts.

Mains Supply: Transformer-operated selenium rectifier. 2 1/2 volt rectifier.

Fuse: 2A (400) with fuse in accordance with current power cord.

OHMMEETER: 0 to 10000 megohms in 7 ranges — 1x, 10x, 100x, 1000x, 10000x, 10000x, 1000x, 100x, 10x, 1x.

RF Voltage Measurement: 500 MC (accuracy 1%)

Frequency Response: 100 to 1000 MHz (accuracy 1%)

Input Resistance: 50 ohms. Shorted by 60 MHz (approx.)

AC VOLTMETERS:

AC VOLTMETERS:
4. **Resistance Measurement Above 1000 Megohms**

If the resistance of the device being measured is above 1000 megohms, the instrument will display a high value. To measure resistance values above 1000 megohms, use the AC-VOLS range. If it is necessary to use the DC-VOLS range, use the function selector to select the appropriate range.

**Example:**
If the resistance is measured to be 1000 megohms, the formula to calculate the resistance is:
\[
R = \frac{11 \times 1000}{11 + 1} = 909.1 \text{ megohms (approx.)}
\]

5. Connect the ground cable to the ground side of the voltage source to be measured.

6. Reset the zero adjust control to zero. Set the range selector to the desired range.

7. Touch the UNI-PROBE to the point of the circuit where the voltage is to be measured.

8. Touch the UNI-PROBE to the point of the circuit where the current is to be measured.

**Note:**
When measuring high resistance values, it is important to ensure that the instrument is properly calibrated and that all connections are secure to avoid false readings.

**DC-VOLTS:**
Set the range selector to the desired range. The circuit connections are shown in Fig. 2.

**AC-VOLTS:**
Set the range selector to the desired range. The circuit connections are shown in Fig. 2.

**Resistance Measurement Above 1000 Megohms:**
Set the range selector to the desired range. The circuit connections are shown in Fig. 2.

**Resistance Measurement Between 20 and 500 Volts:**
If the resistance is below 1000 megohms, use the range selector to select the appropriate range. The circuit connections are shown in Fig. 2.

**Resistance Measurement Below 20 Volts:**
If the resistance is below 20 volts, use the range selector to select the appropriate range. The circuit connections are shown in Fig. 2.
DC SUPPLY VOLTAGEMETERS: Power supply of voltages can be
the signal.
the block on the right of it, and
coupler input without disturbing
coming to the higher resistance of the instrument, it is possible to measure
the output indication during recovery different.
control input. The dc voltage measured at the drop resistor is a very con-
control. The automatic volume control voltages—dc—ac.

AC Voltages, Varies
in the output indication of the strength of oscillation of all frequencies within
the mics or voltage or current components for maximum sensitivity. The watt-
label indicating, on each of its power—
label on the meter, and the other on the voltmeter, and in each of its is measured to the
label on the AC grass, the direct indication for the strength of
oscillating voltages, are always directly proportional to the strength of

Applications

These instruments may be used to monitor and service television receivers.

NOTE: All rms values are in block with full-scale voltmeters of 1.5, 7.1, 30, 50, and
100 volts. All reads must be made with null-scale voltmeters.

5. Reset the range selector to the position which gives a reading near

Blacked Voltages, Measures. This instrument will also measure
and color on voltages can be measured on the corresponding pins of the
colors.

Correction increment: 10 to 600 (where R is the resistive load)

Correction increment: May be calculated from the following formula:
where the resistance is included in the corrected output. The resistance is included in the
short circuit. The correction increment may be calculated from the following formula:

Correction increment: 

In order to avoid crowding of frequency used, scales.

OK, used for the rich of my kicking.

OUTPUT INDICATION: To measure output in the direction of 0.775 volts across 600 ohms resistive load (1 milliwatt), with which
numb resis 120 600 volt across 600 ohms resistive load (1 milliwatt), with which
numb resist 60 600 volt across 600 ohms resistive load (1 milliwatt), with which
numb resist 60 600 volt across 600 ohms resistive load (1 milliwatt), with which

Note: All rms values are in block with full-scale voltmeters of 1.5, 7.1, 30, 50, and
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numb resist 60 600 volt across 600 ohms resistive load (1 milliwatt), with which
numb resist 60 600 volt across 600 ohms resistive load (1 milliwatt), with which

Note: All rms values are in block with full-scale voltmeters of 1.5, 7.1, 30, 50, and
100 volts. All reads must be made with null-scale voltmeters.
The operation is similar to dc voltage measurement. With the bridge circuit Fig. 1A-A1 and the ac bridge, the bridge circuit Fig. 1C-C1 applied to the bridge is biased through the circuit and the ac bridge circuit. The applied resistance determines the current through the battery and the section of the ac power network. In the absence of the ac power network, there is no current across the internal resistors, no current flow through the battery, and the section of the ac power network is isolated from the battery and the ac power network.
11. In the event of meter replacement, new meter should be re-
positioned properly for meter movement or not affected. Meter should be re-
instrument reading. When new meter is installed, if necessary to re-
place the battery. 

12. Replace the battery if the instrument reading is not affected.

13. Replace the battery if the instrument reading is not affected.

14. Replace the battery if the instrument reading is not affected.

15. Replace the battery if the instrument reading is not affected.

16. Replace the battery if the instrument reading is not affected.

17. Replace the battery if the instrument reading is not affected.

18. Replace the battery if the instrument reading is not affected.

19. Replace the battery if the instrument reading is not affected.

20. Replace the battery if the instrument reading is not affected.

The location of each control in Models 233 and 249 is shown.

NOTE: Access to the three calibration controls is obtained by temporarily re-

OMER Calibration: No special calibration is required.

PORTATRONNE: 83/4 in. or 3.10 volt reading is obtained on the meter.

MODEL 249

Model 249

DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

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AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

PORTATRONNE: 83/4 in. or 3.10 volt reading is obtained on the meter.

MODEL 249

Model 249

DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

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AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

PORTATRONNE: 83/4 in. or 3.10 volt reading is obtained on the meter.

MODEL 249

Model 249

DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

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AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

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AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

PORTATRONNE: 83/4 in. or 3.10 volt reading is obtained on the meter.

MODEL 249

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

PORTATRONNE: 83/4 in. or 3.10 volt reading is obtained on the meter.

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

PORTATRONNE: 83/4 in. or 3.10 volt reading is obtained on the meter.

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

PORTATRONNE: 83/4 in. or 3.10 volt reading is obtained on the meter.

MODEL 249

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

PORTATRONNE: 83/4 in. or 3.10 volt reading is obtained on the meter.

MODEL 249

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DC Voltmeter Calibration: Select the FUNCTION selector for "DC".

AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

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AC Voltmeter Calibration: Select the FUNCTION selector for "AC".

DC Voltmeter Calibration: Select the FUNCTION selector for "DC".
For repair:

1. Please include UNTESTED when returning instrument.

2. Ensure the complete instrument of the ECQ service policy is included in your return.

3. If your instrument is damaged, be sure to mention the extent of the damage.

4. If you have any questions or concerns, please contact us directly.

If your instrument fails to perform properly, this is due to one of the following conditions:

1. A defect in the component or circuitry.
2. A defect in the software or firmware.
3. A defect in the power supply.
4. A defect in the mechanical components.
5. A defect in the power supply.

In the event of such failure, please contact your authorized service center for repair.

Instrument failure to operate on any output channel is normal on OMS.

1. Remove and replace all faulty components.
2. Check all connections.
3. Check all wiring.
4. Check all power supplies.
5. Check all fuses.

If instrument performs as expected, return to use.

Instrument failure to operate on any output channel is normal on OMS.

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