1. Visual

Check for correct components assembly.
Check wiring.
Check for dry joints, shorts, broken tracks etc.

2. Charging circuit

Check visually the wiring of the transformer. With the instrument turned OFF and FS2 removed, apply 240/120V ac mains as applicable to the transformer via a mains charging lead and the instrument charging socket. Measure the output of the transformer with either an AVO Model 8, a DA117 or a similar instrument switched to ac volts. The output of the transformer should be between 13V and 14.5V. Disconnect mains and replace fuse FS2.

3. Charging batteries

Batteries should be charged by means of the mains charging socket on the front panel. Full charge is achieved after 10 hours, but a charge of 3-4 hours should be sufficient for fault finding and setting up, and further charging should not be carried out.

4. Negative supply rail

Check operation of negative supply rail by connecting a dc voltmeter between the negative of the battery and the negative supply rail (either an AVO Model 8, a DA117 or similar instrument will be suitable).

5. Test current

Connect a Model 8, (or a DA117 or similar) switched to measure dc current, between the two current terminals of the instrument. When the instrument is switched from the OFF position to the 2000mΩ position then a current of 2A + 20% -0% should flow.

6. Current flow indication

Check that with the above conditions for test 5 that the green l.e.d. on the front panel lights when the test current is flowing. Return instrument to OFF position, and disconnect meter from two C terminals.

7. Battery low

Disconnect the positive terminal of the battery. Power the instrument from an external 6V ± 3% dc power supply connected between the negative of the battery and the wire removed from the positive of the battery (the negative of the power supply being connected to the negative of the battery). Switch the instrument to the 2000mΩ position. Adjust R11 until the red battery low l.e.d. begins to come on. Turn instrument OFF and revert to battery operation.

8. Protection

8.1 Check visually/audibly that the relay does not operate when the instrument is switched from the OFF position to either the 2000mΩ position or the 20mΩ position. Return instrument to OFF position.

8.2 Check that with a short circuit across the four terminals that the relay operates when the instrument is turned from the OFF position to the 2000mΩ position. Further rotation of the function switch to the 20mΩ position should not cause the relay to change state. Return instrument to OFF position and remove short circuit.

8.3 Apply 20V ac from a variac to the terminal pairs P1 shorted to C1 and P2 shorted to C2. The relay should not come on in any of the 3 switch positions. Increase the supply to 240V ac ± 5% and ensure that the relay still does not turn on, but that the high voltage warning neon glows. Disconnect variac and return instrument to OFF position.

9. 2000mΩ range

Connect duplex handspikes to terminals, select 2000mΩ range and connect handspikes across a 1Ω standard. Adjust R35 until display reads 1000 ± 0 digits.
Check readings 1900mΩ to be within ± 21mΩ
0Ω to be within ± 2mΩ.
Return instrument to OFF position.

10. 20mΩ Range

Switch instrument to 20mΩ range and measure across 10mΩ standard. Adjust R34 until instrument reads 10.00 ± 0 digits.
Check readings 19mΩ to be within ± .21mΩ.
0Ω to be within ± 0.02mΩ.

Test Gear required

1900mΩ Standard

1000mΩ Standard

19mΩ Standard

10mΩ Standard

Duplex handspikes

Shorting links or wires

240V 50 HZ/120V 60HZ ac supply

DA117 or Model 8 or similar current measuring instrument.

WARNING

THIS INSTRUMENT CONTAINS LIVE VOLTAGE
ONLY AUTHORISED PERSONS TO WORK ON
INSTRUMENT WITH COVER REMOVED,
USING EXTREME CAUTION.