

IM-103 Rebuild Kit

The IM-103 Line Voltage Monitor uses a bridge circuit with an easy-to-read, expanded-scale meter to enable you to continuously and accurately monitor power line voltage. This monitor uses a simple half-phase dc power supply directly from the line with no isolation transformer. Resistor R1 limits the current and reduces the voltage to the necessary level to run the meter. Unfortunately, this resistor, and other parts were rated very close to their absolute maximum power dissipation, and over time, will degrade in normal operation.

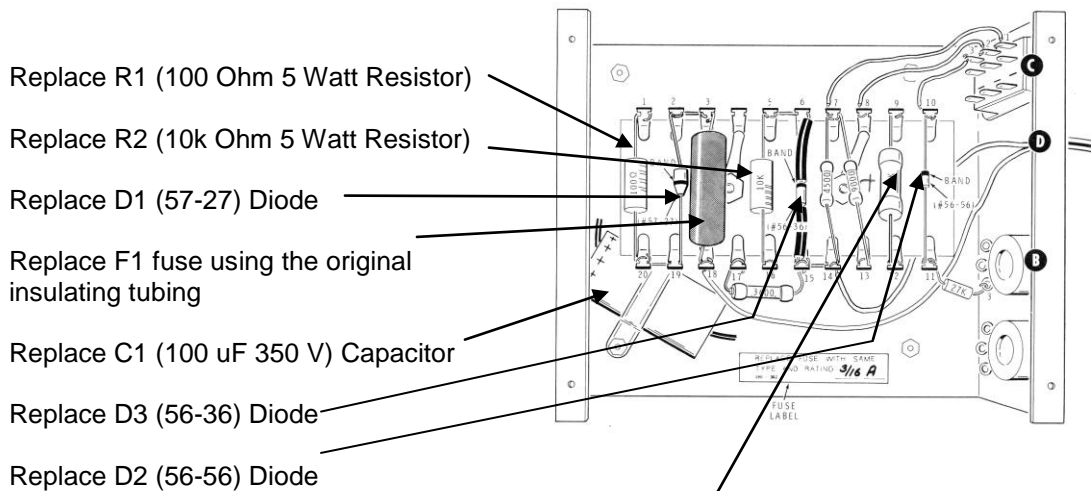
This kit of parts contains the typical parts necessary to rebuild your IM-103 and get it working accurately again. In the kit you will find replacement parts for resistors: R1, R2, R4, D1, D2, D3, F1, and C1. These are typically the parts that fail over normal operation. Resistors R1, and R2 have been upgraded to 5 Watt resistors while the original Heathkit design called for 2 Watt resistors. This additional margin should allow your IM-103 to now function over a longer period of time than did the original kit.

It is recommended that you refer to the original manual while performing the replacement of the parts. Before beginning:

MAKE CERTAIN THAT THE UNIT IS NOT CONNECTED TO A POWER SOURCE

DO NOT PERFORM THESE STEPS UNLESS YOU ARE QUALIFIED TO DO SO

To replace a part, it is better to cut it from the circuit then gently remove the remaining leads using a low wattage soldering tool. Be careful not to destroy the terminal board by overheating the individual terminal contacts. If these get too hot, they can fall out of the terminal board. When replacing C1, insert the leads into the hole of the terminal board and solder it there rather than the top contact pins. Confirm the polarity! Because of the smaller size of the replacement capacitor, you will probably not need the original plastic retainer to hold it in place.



Only replace R4 (18k Ohm) if it shows signs of high temperature operation, is cracked, or shows any other signs of wear otherwise, keep the original part

Make certain that there are no shorts or solder bridges between any of the components or to the metal cabinet.

Remember that this unit runs directly off of the mains power line and has no voltage isolation or other safety mechanism to protect the user from a deadly shock!

You can now calibrate the meter per the instructions in the original Heathkit manual.