

## REPAIR GUIDE FOR COMMON PROBLEMS FOUND WITH MPL50



### PLEASE NOTE

All repairs must be carried out by a qualified person.

Before repairing please ensure that the MPL unit is disconnected from both the mains supply and the battery.

High risk of electric shock.

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1. Lights Fail To Come On / Fuses Repeatedly Blow
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## 1. LIGHTS FAIL TO COME ON / FUSES REPEATEDLY BLOW

Before repairing please ensure that the MPL unit is disconnected from both the mains supply and the battery – **High Risk of Electric Shock**.

If the unit fails to light at all when switched on this is an indication that the processor board has failed to power up. The board runs a test on start-up and should scroll between the LED display.

The first check is to the fuse in the plug, use a multimeter to check the fuse has a resistance of  $<1R$ .

If the fuse is fine continue by unscrewing the lid from the unit to inspect.

Use a multimeter to check continuity between the plug and the mains switch, as detailed in fig1 and fig2. Pay attention to the crimps connecting to the mains switch and look for signs of overheating and/or breakage.

Check for signs of damage on the centre tap, coming from the transformer to the shunt. It is worth pulling on the centre tap with a screwdriver where it connects to the transformer, as on early models this was prone to overheat.

Visually check the connections from the transformer to the thyristors (fig2/fig5), and pay particular attention to the state of the thyristors themselves. Look for cracks and damage, and other signs of overheating.

Measure resistance between the legs of the thyristors. This should be between 30–50R.

## 2. BOARD LIGHTS UP WITH POWER BUT FAILS TO CHARGE

Before repairing please ensure that the MPL unit is disconnected from both the mains supply and the battery – **High Risk of Electric Shock**

Unscrew lid from unit to inspect.

Measure resistance across the 60A fuse (fig1). This should be  $<1R$ .

Check resistance is  $<1R$  from the -ve Anderson connector to the thyristor heatsink (fig5) and then is  $<1R$  from the thyristor heatsink to T3 on the processor board (fig6).

Check resistance is  $<1R$  from the +ve Anderson connector to the 60A fuse (fig1) and then check that resistance is  $<1R$  from the 60A fuse to T4 on the processor board.

Check that Anderson crimps are properly aligned in the casing and are making good contacts.

Check for signs of damage on the centre tap, coming from the transformer to the shunt.

It is worth pulling on the centre tap with a screwdriver where it connects to the transformer, as on early models this was prone to overheat.

Visually check the connections from the transformer to the thyristors (fig2/fig5), and pay particular attention to the state of the thyristors themselves. Look for cracks and damage, and other signs of overheating.

Measure resistance between the legs of the thyristors. This should be between 30–50R.

Measure resistance between the legs of the thyristors and the heatsink. This should be greater than 5MR. Check connections from the thyristors to the processor board (fig6). Particularly SCR1 and SCR2.

Remove the processor board from the front panel and visually check for damage.

Look for F1 on the processor board and check resistance  $<1R$ . If all connections are made replace processor board.

## 3. FANS FAIL TO RUN

Before repairing please ensure that the MPL unit is disconnected from both the mains supply and the battery – **High Risk of Electric Shock**

Unscrew lid from unit to inspect.

Check that fans run freely and that the blades are properly aligned in the cases.

Remove processor board and check that the connections are properly made to fan A and B (fig3/fig6).

Look for signs of overheating on R56, R57, R59, R60, Z4 and Z5. If this is the case both fans and processor board must be replaced.



## 4. FAILS TO GO INTO CALCIUM / CONTINUOUS MODES

Before repairing please ensure that the MPL unit is disconnected from both the mains supply and the battery – **High Risk of Electric Shock**

Unscrew lid from unit to inspect.

Remove processor board and check that the connections are properly made to rocker switch (fig4/fig6).

If connections are made, processor board failure.

## APPENDICES

fig 1 – mains and Anderson connections

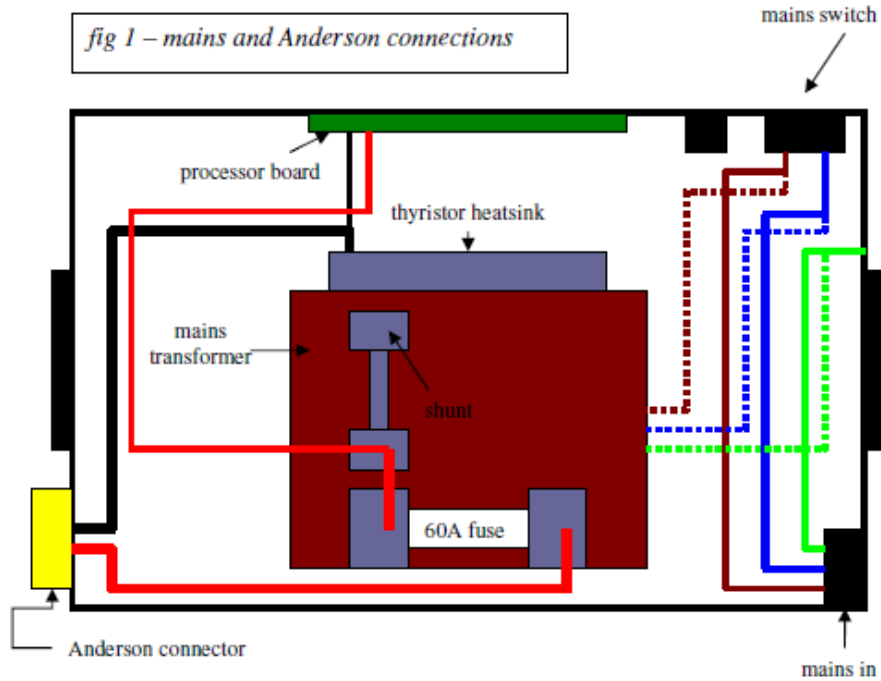
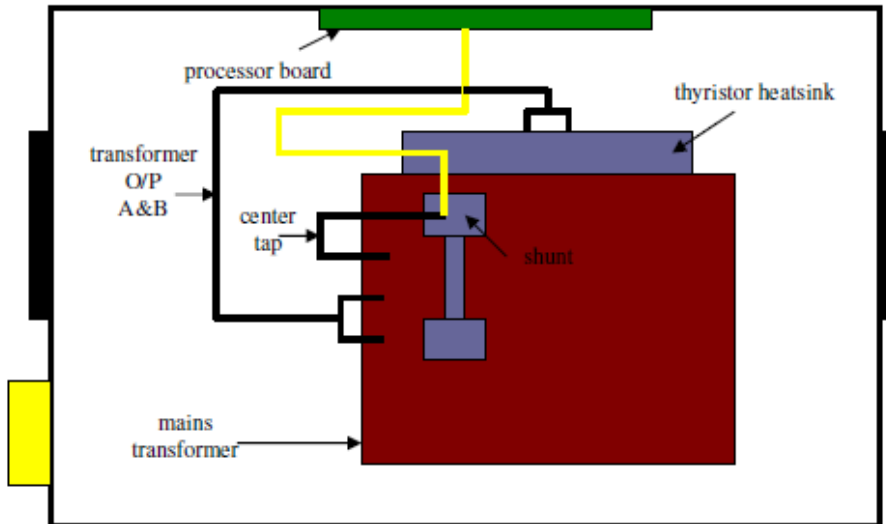


fig 2 – transformer connections



## APPENDICES

fig 3 – fan and thermal cut out connections

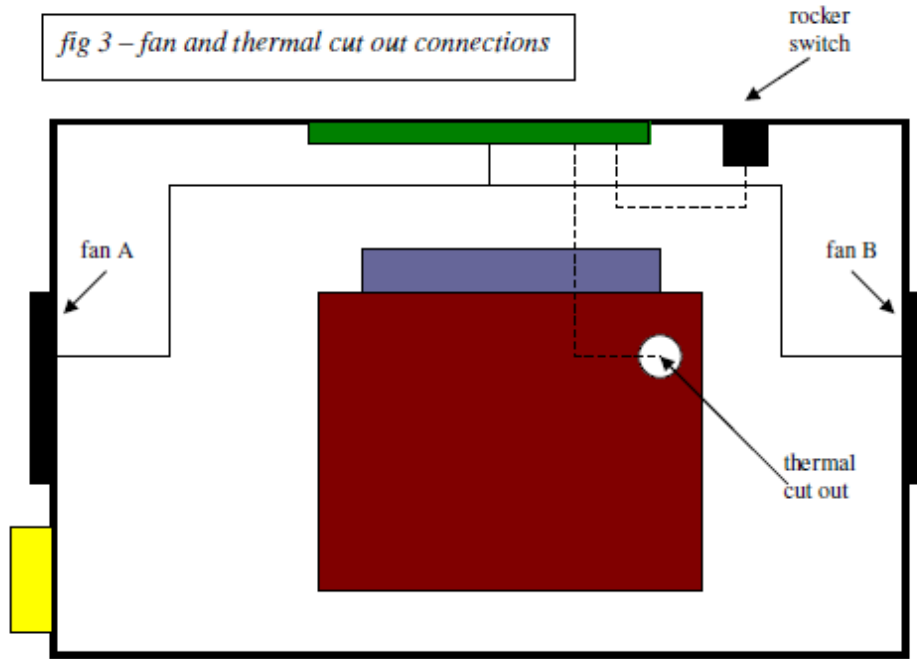
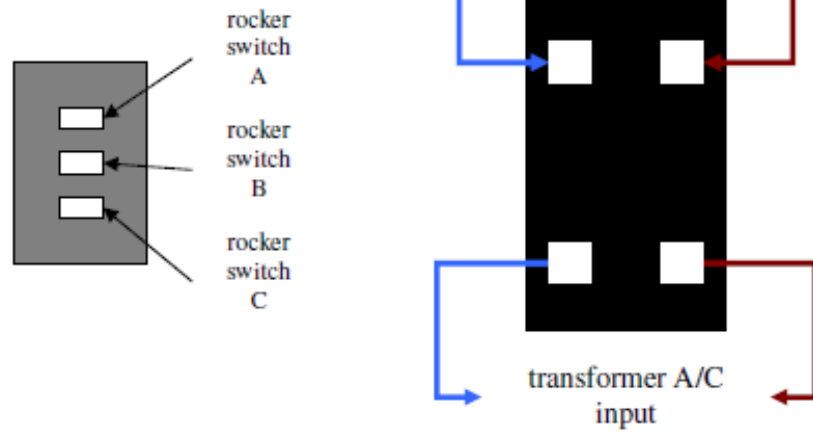


fig 4 – rocker and mains switch connections



## APPENDICES

fig 5 – thyristor connections

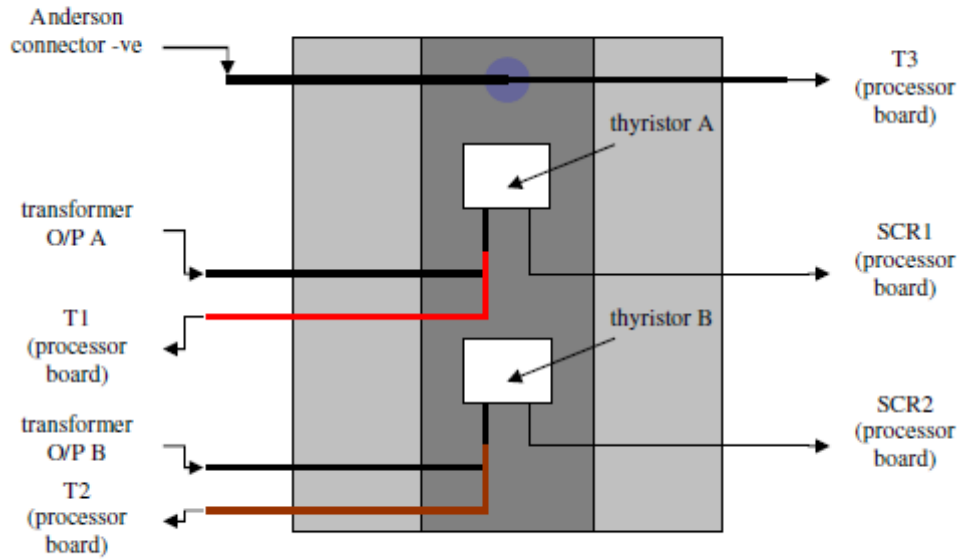


fig 6 – processor board connections

