

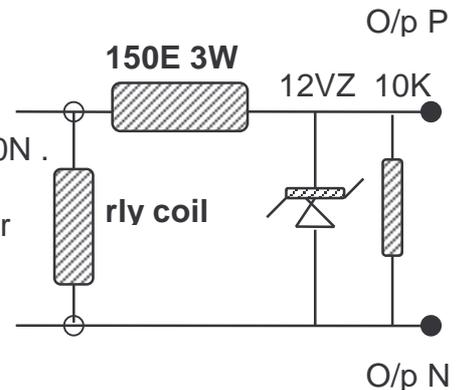
**A. Modification or additions for STC1000.**

**1. Resistor & Capacitors**

Module Card, Use only MFR 1% RESISTORS Brown Band. Use only Multilayer miniature plastic caps for 7107 circuit.

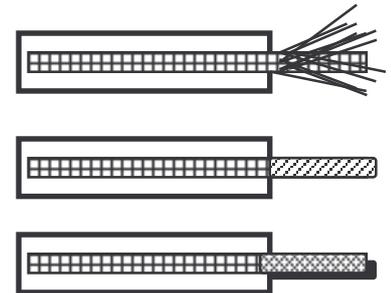
**2. Main Card.**

- a. Add 10K Resistor Between Base and Emitter of BEL100N .
- b. Add the Zener, 10K and 150E instead of a relay coil .for pulse output model STC1000'X'P
- c. Capacitor C5 should be 1uF 40V for STC1000'X'P.
- d. There are 6 jumpers on Main Board .



**3. Proportional Control Card.**

- a. Timing capacitor to be 1uF for 1 Sec Cycle Time (P).
- b. Proportional Band Min. +/- 1 Count. Max +/- 10 Counts.
- c. Use Strain relief for wires or strip and solder properly



Strip with a stripper do not use your teeth, Twist all the strands Tin the tip of the wire till the Solder slightly creeps into plastic sleeve over wire.

**3. General Checklist.**

- a. T. C. Terminals + and - to be painted yellow and red for K type TC.
- b. Propband Increase Clockwise decrease anticlockwise.
- c. Errorcal Increase Temperature Clockwise turns on LED. decrease turns off.
- d. Setpoint max. Clockwise limited to 10% more than max. temp required e.g. for 400 deg model it can be upto 450.
- e. After varying and setting presets or TRIMPOT lock it with a little whitener, Fabric paint by applying a dot of it at the junction of the moving part to the stable part.

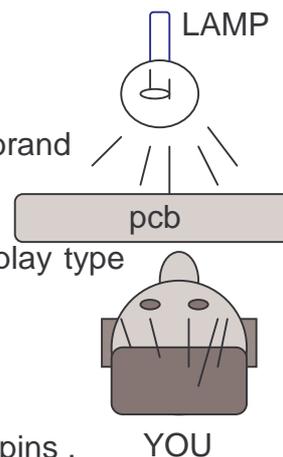
- f. Put Black insulation tape to close open areas / screws in back panel.
- g. Check if case of 100K pot in back panel is shorting with any of the three pot terminals.
- h. Check if front shield is shorted to gnd, and insulate front screws with tape.

## B. General Production & Trouble shooting hints.

- a. Do assembly of the card with a tested assembled 3D reference. After full assembly do visual inspection in this order First keep both card one reference and the other manufactured under a bright light

**Compare Apple  
to Apple**

1. Compare resistor color patterns one by one.
2. Compare Electrolytic capacitors physical appearance and POLARITY.
3. Verify values of plastic and ceramic capacitors.
4. Cross-check Diode sizes and POLARITY. Verify Zener values.
5. Check IC and Regulator POLARITY and Exact type number / brand Korean or Taiwanese makes are troublesome sometimes.
6. Check Transistor, MOSFET, LED, POLARITY. and verify display type No. and Polarity .
7. Check for connector patterns and polarity and switches etc.
8. Reverse the card and Check for solder bridges between close pins .
9. Reverse card and Check for hairline shorts and solder streaks due to bad PCB processing or Soldering.
10. Reverse card and check for hairline cuts or pads lifted off card.
11. Closely observe for dry solders on big electrical parts (L and TX) a dry solder will cover the pin and will be dull in shine.
12. After proper checking unit should work on power up or when assembly is over If all the components were subject to incoming inspection and testing. If till unit does not work remove power and do cold check comparison with reference unit in DMM 200K R range, if problem persists continue with power on testing and solve by DMM or scope tests.



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