Transarc DC203i/303iE – Service Notes

General:

Electrically/electronically both machines are basically the same the main difference apart from output are listed below:

- The DC203i only incorporates one each of the following Fuse PCB/Primary Inverter PCB/Secondary Inverter PCB/Fan Motor.

Note:

Although the relevant PCB's carry different part numbers the operation of each is the same. See the attached simplified drawings.

Operation: - Switch S1 closed

- 415Vac 3 phase is now supplied to the fuse board(s).
- 415Vac 3 phase is also supplied to the Inverter PCB(s) charging up the main inverter caps.
- 415Vac 2 phases supplied to the fan circuits.
- 415Vac 2 phases supplied to J1 & J2 on the Control/Logic PCB, this is used via transformer T1 to provide the power supplies for this board.

No Fault Condition:

- +12V is applied to the Green-ON Led which is now illuminated.
- The current reference is now present via the current potentiometer 0-6V, this is then applied via ribbon cable J3 to the Daughter board that is soldered directly on to the main inverter PCB.

  This signal is then compared with the current feedback signal from the shunt, the resultant voltage being used to fire the Opto and hence the IGBT driver circuits.
- The IGBT's are now fired and ac voltage is now applied to the transformers located on the secondary inverter PCB(s), open circuit voltage is now available at the output terminals.

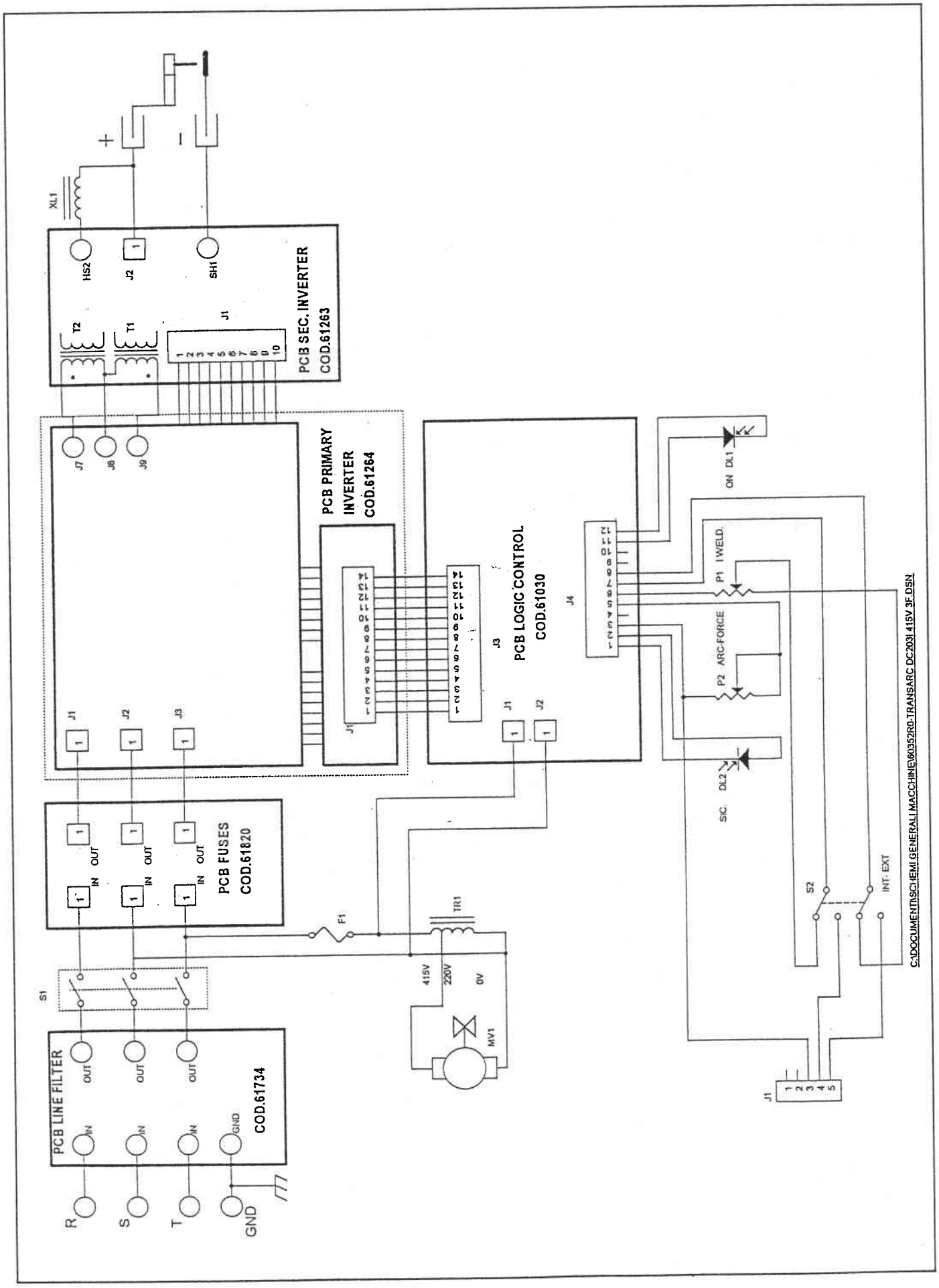
Fault Condition: - Over temperature

The +5V inhibit signal is no longer grounded by the OV connected to one side of the thermostat circuit (see Primary Inverter PCB drawing). This causing the following:

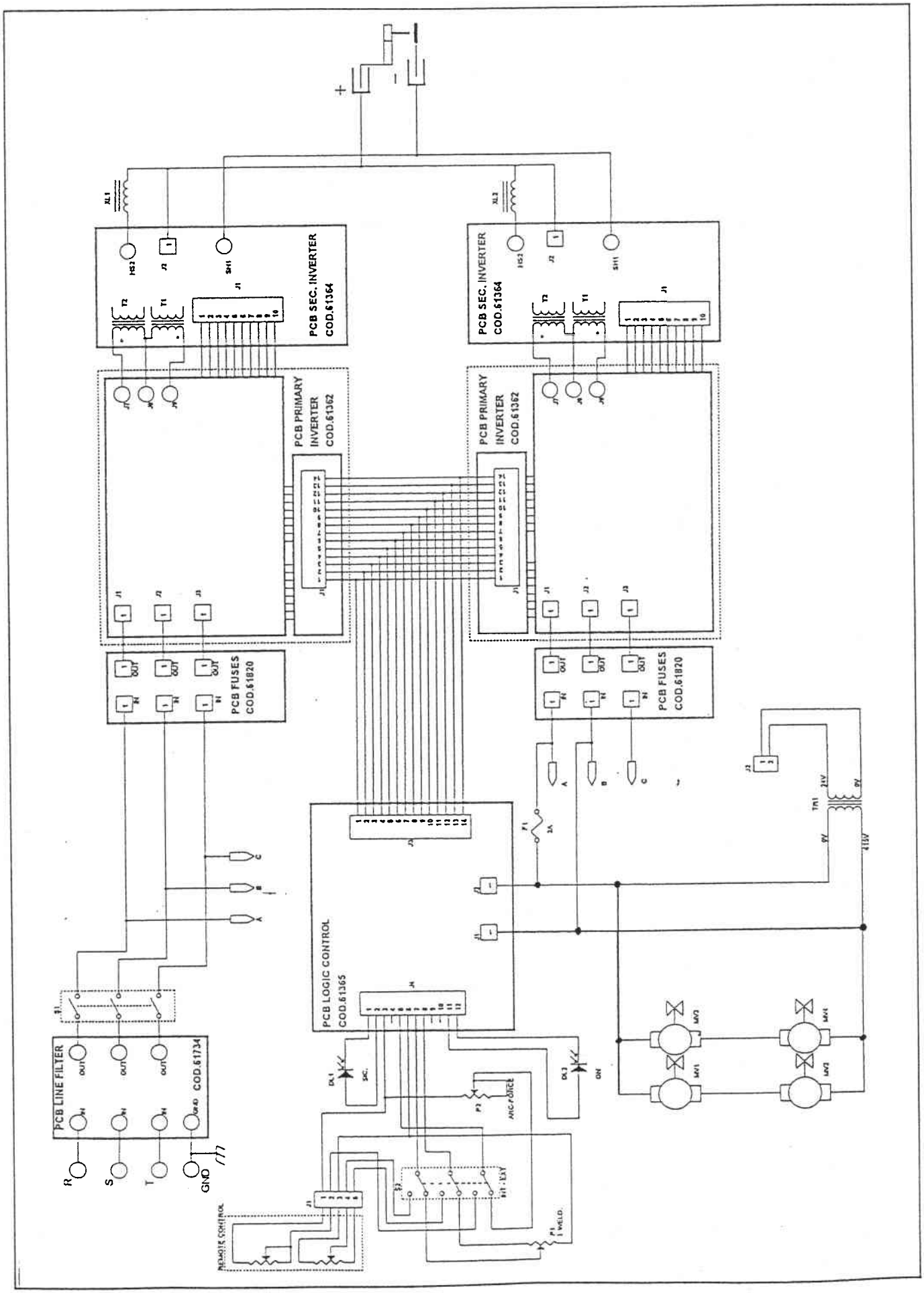
- The +5V now switches on the transistor grounding the output voltage from U1 ensuring that the Opto cannot be fired, thus preventing the gate pulses to the IGBT's.

- The +5V is also applied via connector J3 to the Control & Logic PCB (see drawing) this energises the transistor effectively grounding pin 1 of connector J4 causing the Yellow overtemperature light to be illuminated.

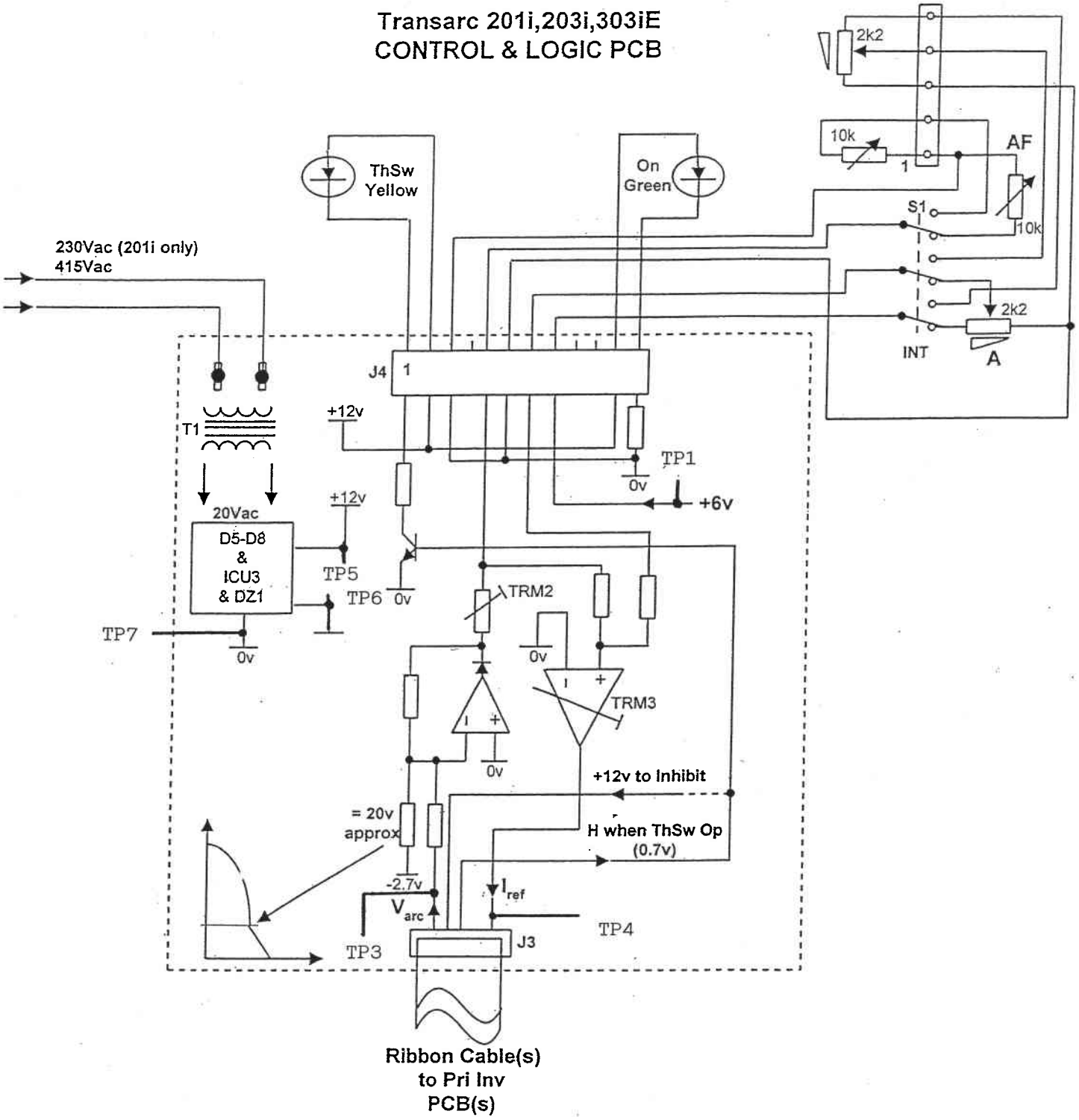
Circuit Diagram Transarc DC203i



Circuit Diagram Transarc DC303iE



Transarc 201i,203i,303iE
CONTROL & LOGIC PCB



TP7 = 0V
TP6 = -3V
TP5 = +12V
TP4 = +0.1-3.4V
TP3 = +65V
TP1 = 6V

Layout Control/Logic PCB
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