

140. The relay protection circuit protects the relay contacts 2RLA1 in the reflectometer assembly. These contacts are used to switch +24VT to the p.a. stages in the transmit condition, and have to handle a high initial current at switch on because of the large number of decoupling capacitors in the p.a. stages. A transistor circuit, shown schematically in Fig 20, is effectively connected across the contacts of 2RLA1 (via pins 10 and 11) and is switched on by the same relay drive signal (pin 12) as for master relay 2RLA. Thus, when switching to transmit the transistor turns on before the relay contacts close, so that the high-value surge current is diverted; the relay contacts close later and only have to carry the normal current. The +24V switched supply on pin 13 is the power supply for the relay protection circuits, and is switched on and off by the power switch.

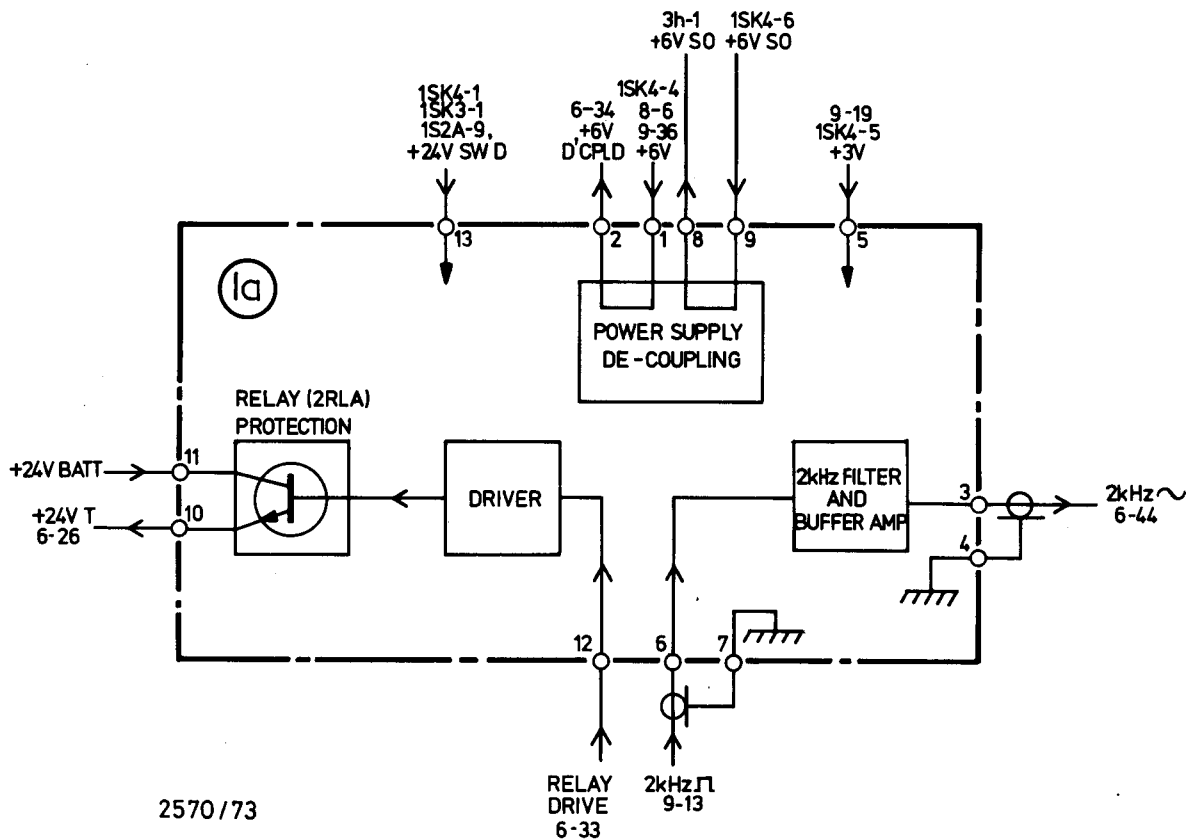


Fig 20 - 2kHz filter assembly (1a)

141. Assembly 1a also contains certain LC decoupling components associated with the +6V power supplies.

POWER SUPPLIES

Power supply assembly (5a-b)

142. The power supply circuits are contained on two p.c.b. designated 5a and 5b. These two boards are linked by wire straps and enclosed in a screening can to form assembly 5a-b which is mounted on the main chassis. All power supply connections are made via a multiway plug 5PL4 on board 5a.

143. The power supply assembly accepts the +24V SW'D input from the power switch and produces four stabilized outputs (+3V, +6V, +12V and +110V) for use in the equipment. The 3, 6 and 12V supplies are all obtained using separate switched regulators. In this type of circuit a series control transistor in the load line is switched on and off by a pulse train from a multivibrator. A comparator circuit compares the load line voltage with a fixed reference voltage and produces a control signal to adjust the mark-to-space ratio of the pulse train, so that the output voltage is stabilized against fluctuations in load current.

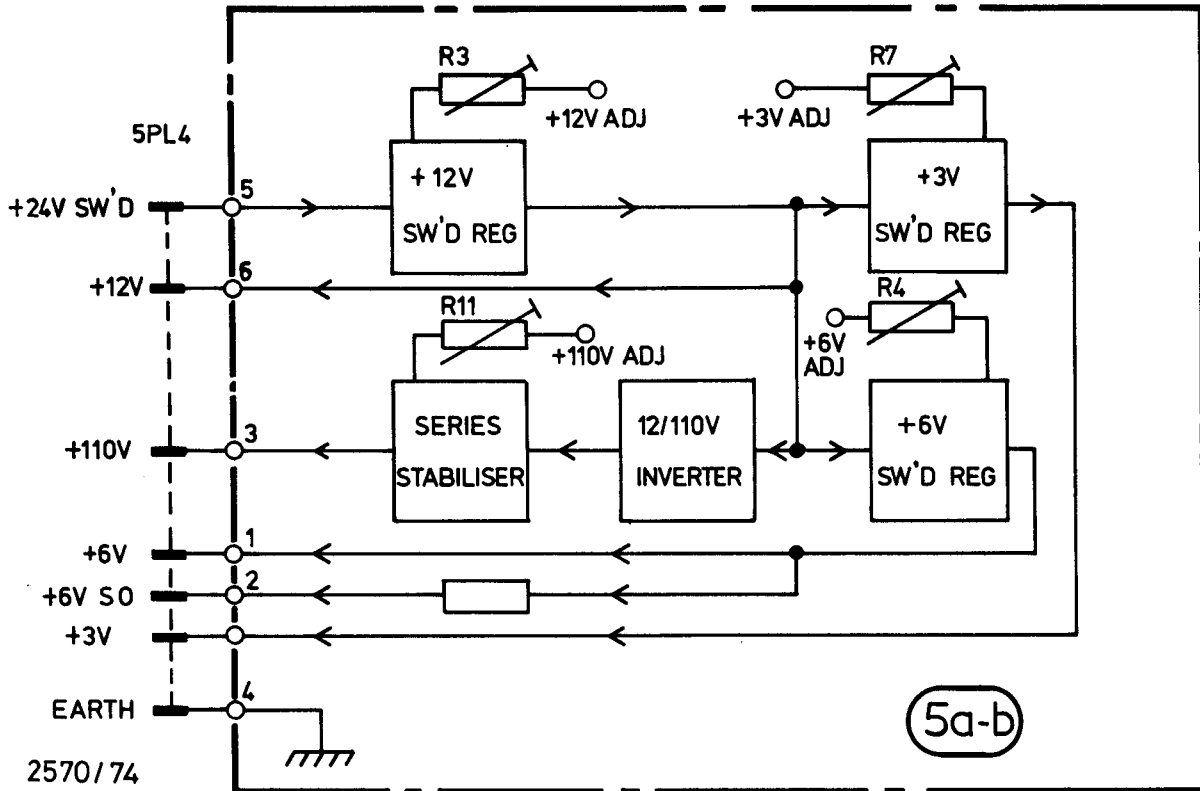
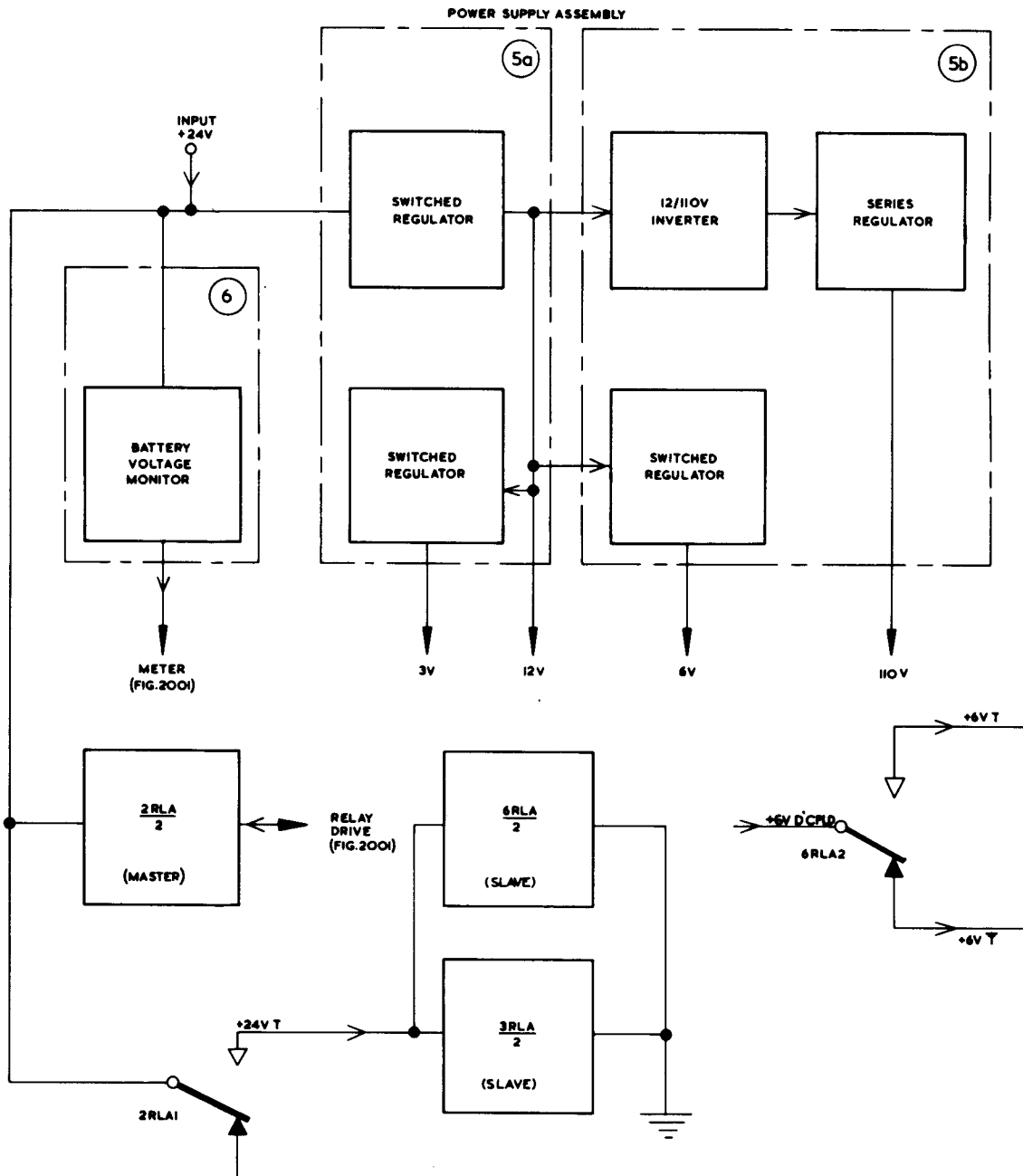


Fig 21 - Power supply assembly (5a-b)

144. The +110V supply is derived from the +12V stabilized supply and is obtained using a 12/110V inverter followed by a conventional series stabilizing circuit. The 110V supply is used by the synthesizer control assembly for controlling the varicap diodes in the r.f. turret assembly.

145. The +6V S.O. supply is a special ripple-free high stability supply used only by the slave oscillator. The general +6V supply, +6V S.O. and +12V supplies all incorporate short-circuit protection, but this is not included in the +3V supply. The 3, 6 and 12V switched regulators are set up by the preset resistors R7, R4 and R3 respectively. The 110V series stabilizer is set up by preset resistor R11.

Note: The next page is Page 1001.



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Fig 2002 - Power supply assembly and relay block schematic diagram

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END of Section 2