

8. DRAWINGS

8.1. TERMINALS

On the circuit diagrams, each terminal is identified by a number and in most cases by an explanatory text. In addition to this, the number of the module and terminal to which the lead is connected is indicated.

8.2. VOLTAGES

Typical DC voltages are indicated on the circuit diagrams next to the points to which they refer and are marked with a "V".

Typical logic levels are indicated between brackets (LOW/HIGH) on the circuit diagrams next to the point to which they refer.

8.3. SYMBOL EXPLANATION

8.3.1. LOGIC CIRCUIT

A small circle at an external input means that the specific input is active LOW, i.e. it produces the desired function, in conjunction with other inputs if its voltage is the lower of the two logic levels in the system, otherwise the specific input is HIGH.

8.3.2. LOGIC FUNCTIONS

Logic functions are labelled with mnemonic letters between brackets. An active LOW function is indicated by a bar over the label.

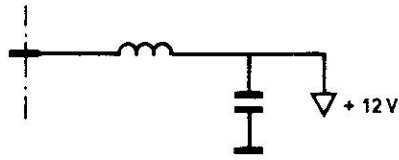
More logic functions may be connected by means of the principles of Boolean Algebra.

8.3.3. ARROWS

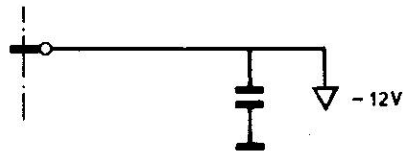
A black arrow on a line indicates in which direction an AC-signal flows.

A white arrow on a line indicates in which direction the information of a DC signal flows. An exception from this rule is the supply lines and their connections, which are always indicated by a supply voltage level or its associated label.

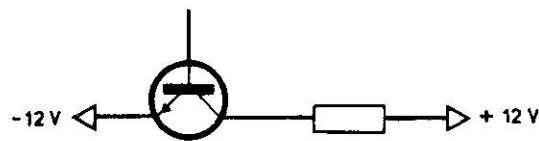
Positive supply line : Example



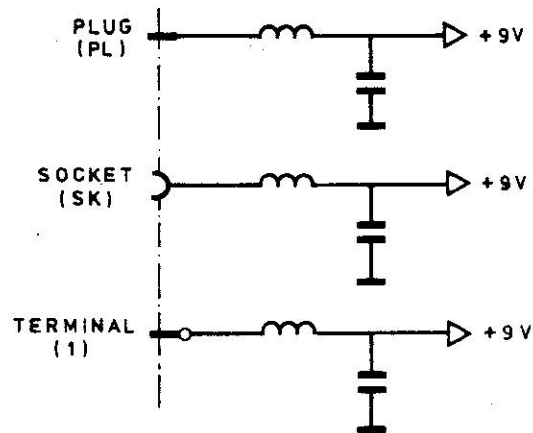
Negative supply line : Example



Connections to supply line : Example



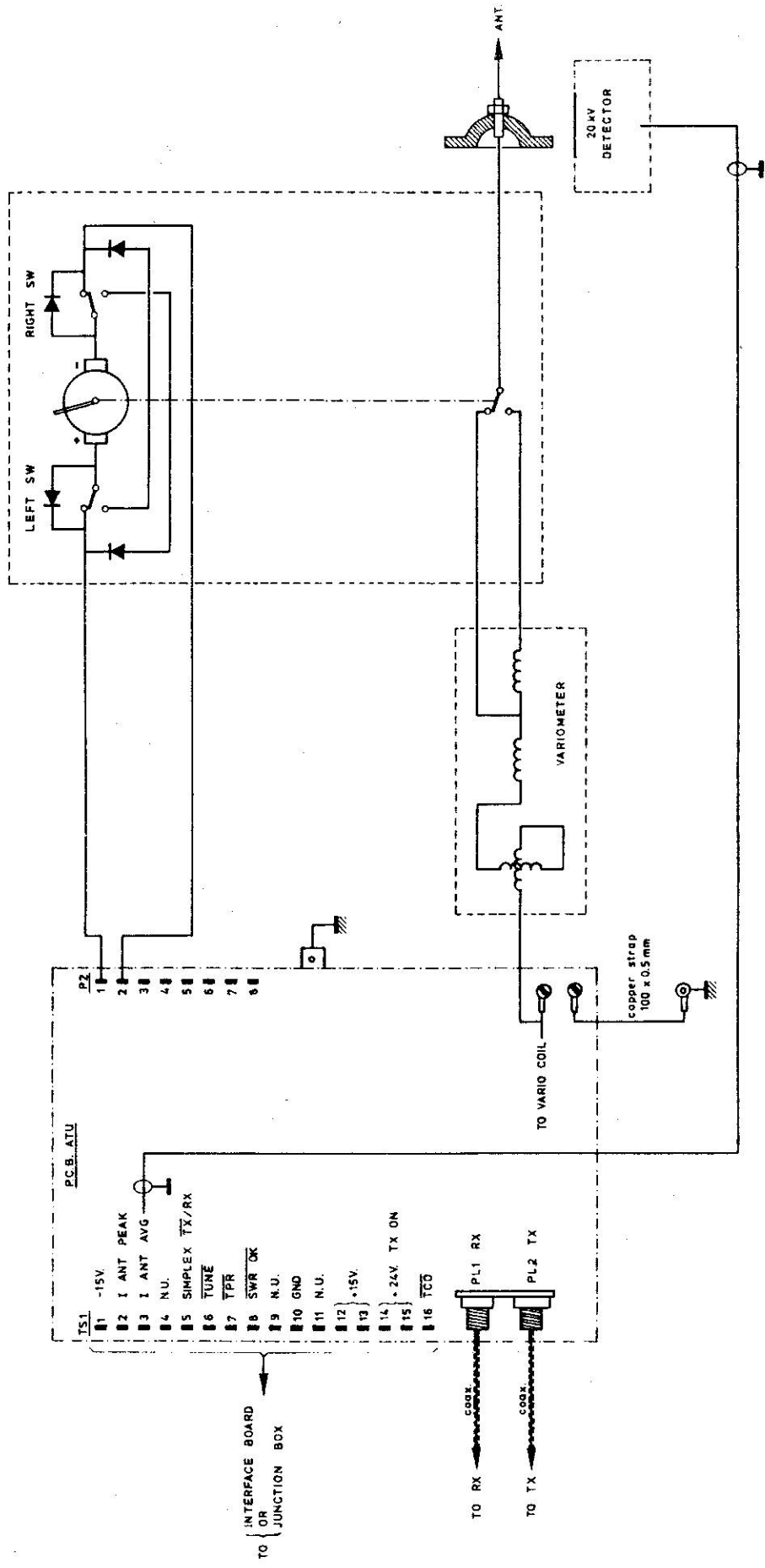
Connectors :



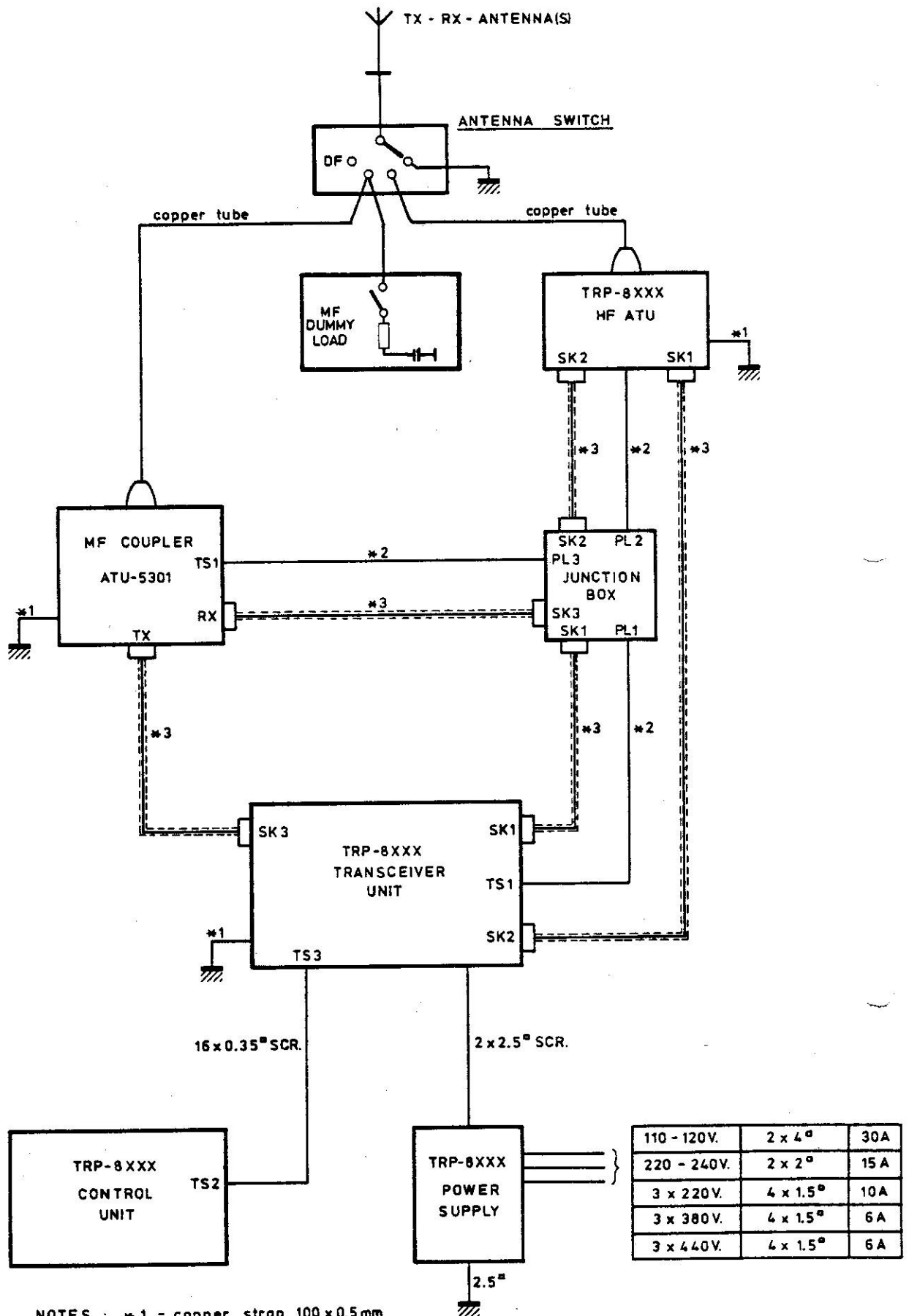
**MF COUPLER
TYPE ATU 5301**

L I S T O F D R A W I N G S

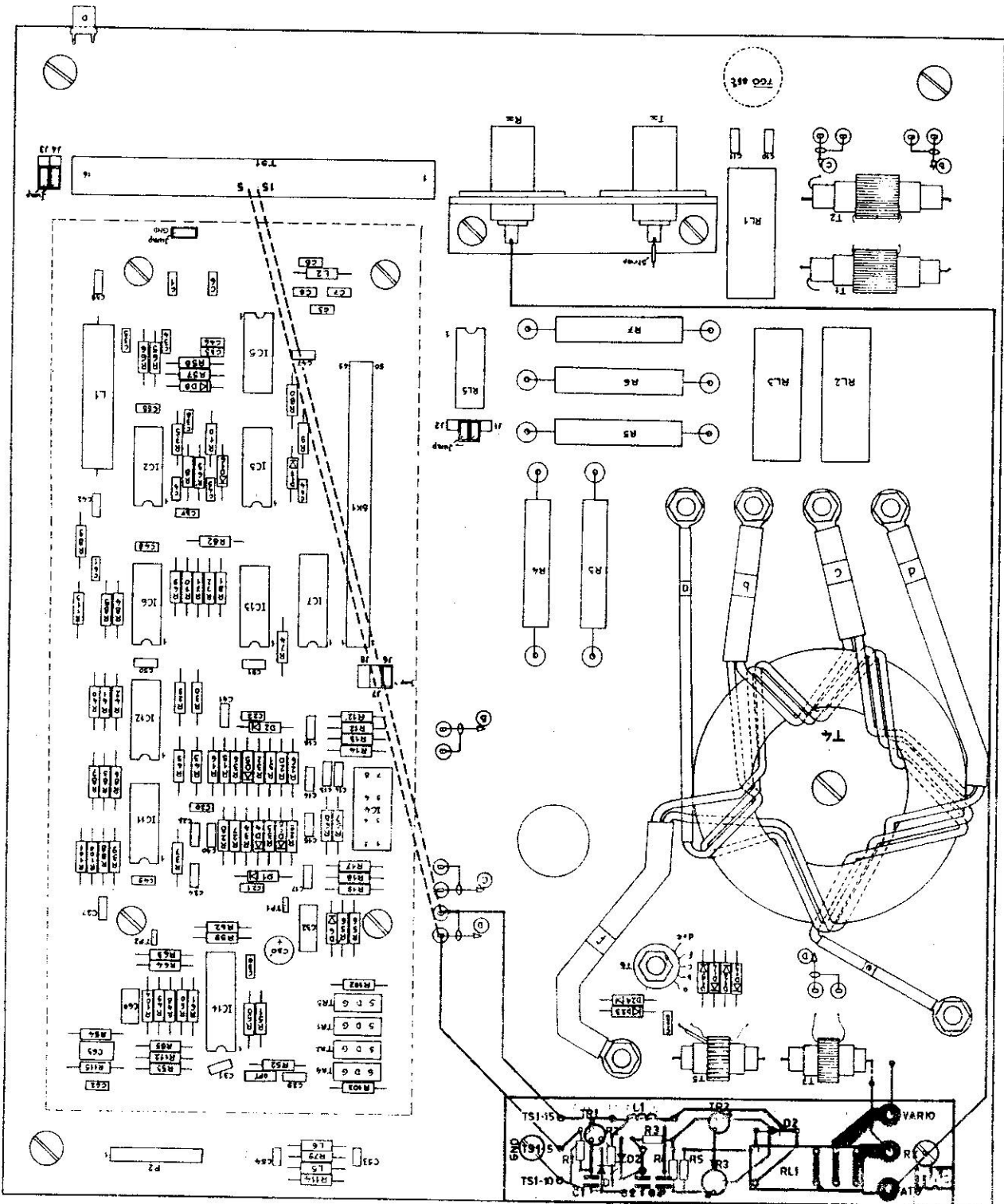
Block diagram	2182-00
Interconnection diagram	2182-05
Cable layout	2182-06
ATU board - schematic diagram	2182-10
- circuit layout	2182-10-1
Microprocessor board - schematic diagram	2182-11
- circuit layout	2182-11-1
Junction box - schematic diagram	2182-12
- circuit layout	2182-12-1
20kV detector board - schematic diagram	2182-13
- circuit layout	2182-13-1
Cabinet outlines	2182-80
Junction box outlines	2182-81



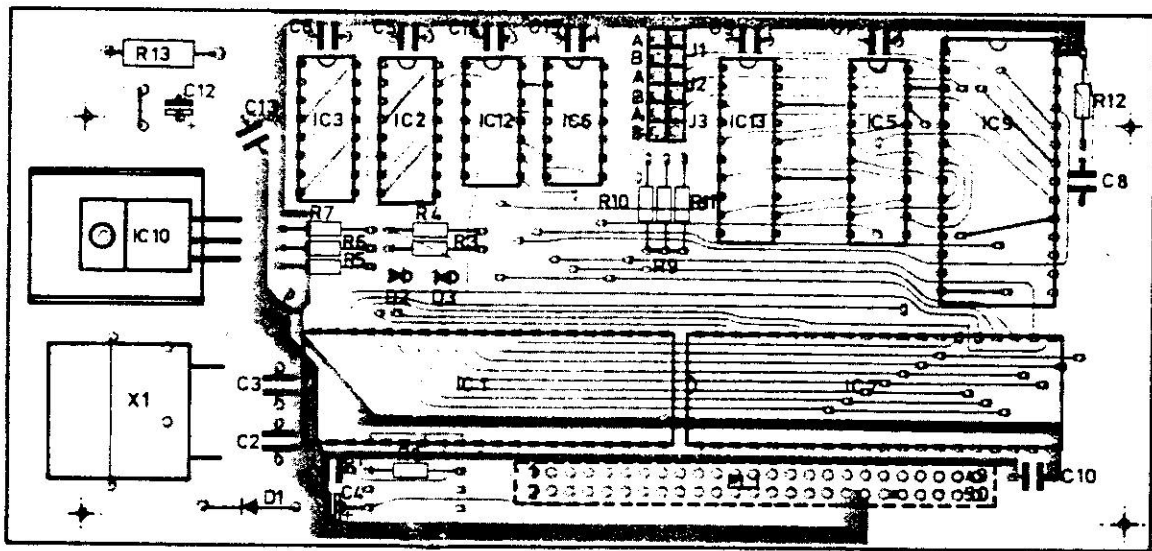
INTERCONNECTION DIAGRAM



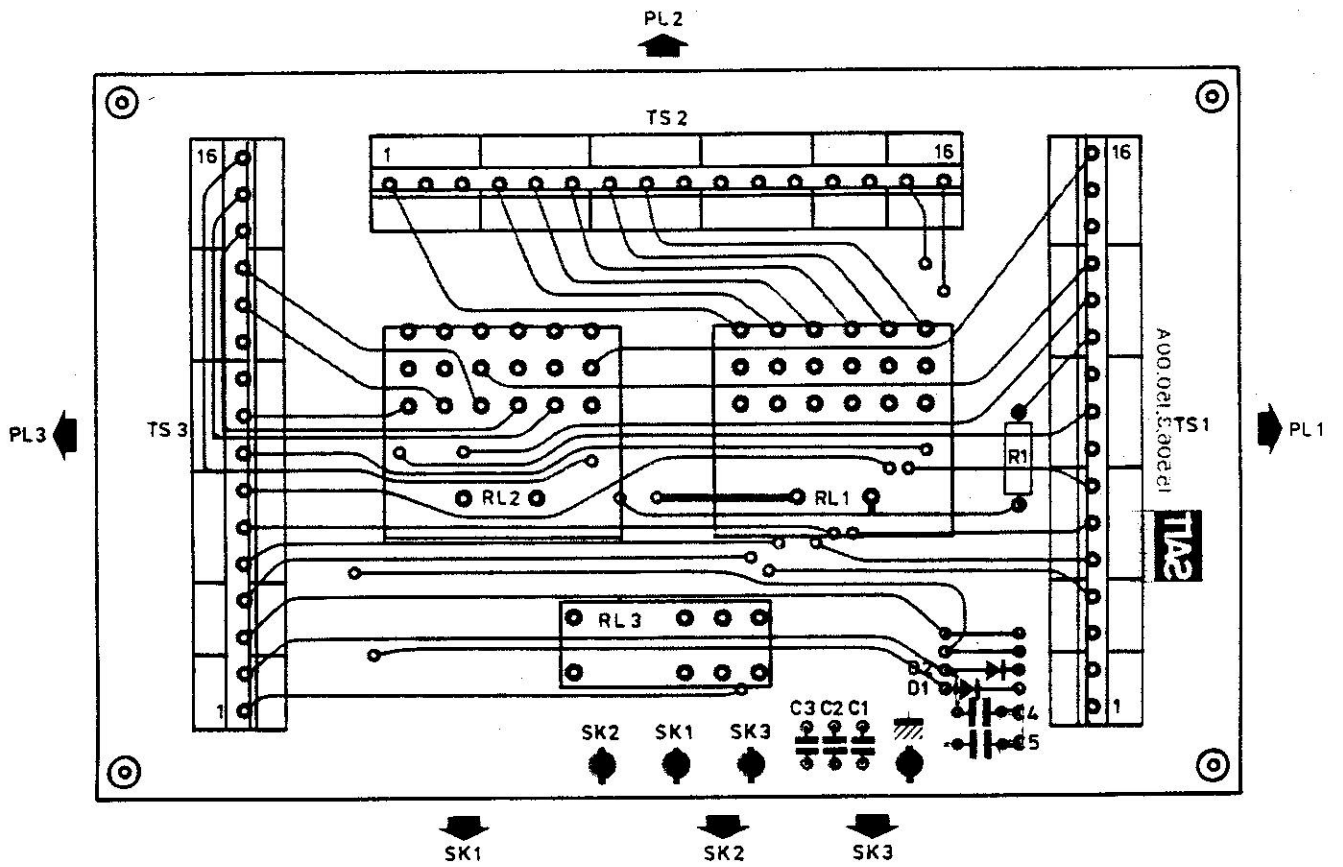
NOTES : *1 = copper strap 100 x 0.5 mm
 *2 = 18 x 0.5^{sq} screened
 *3 = coax. RG 213 / U

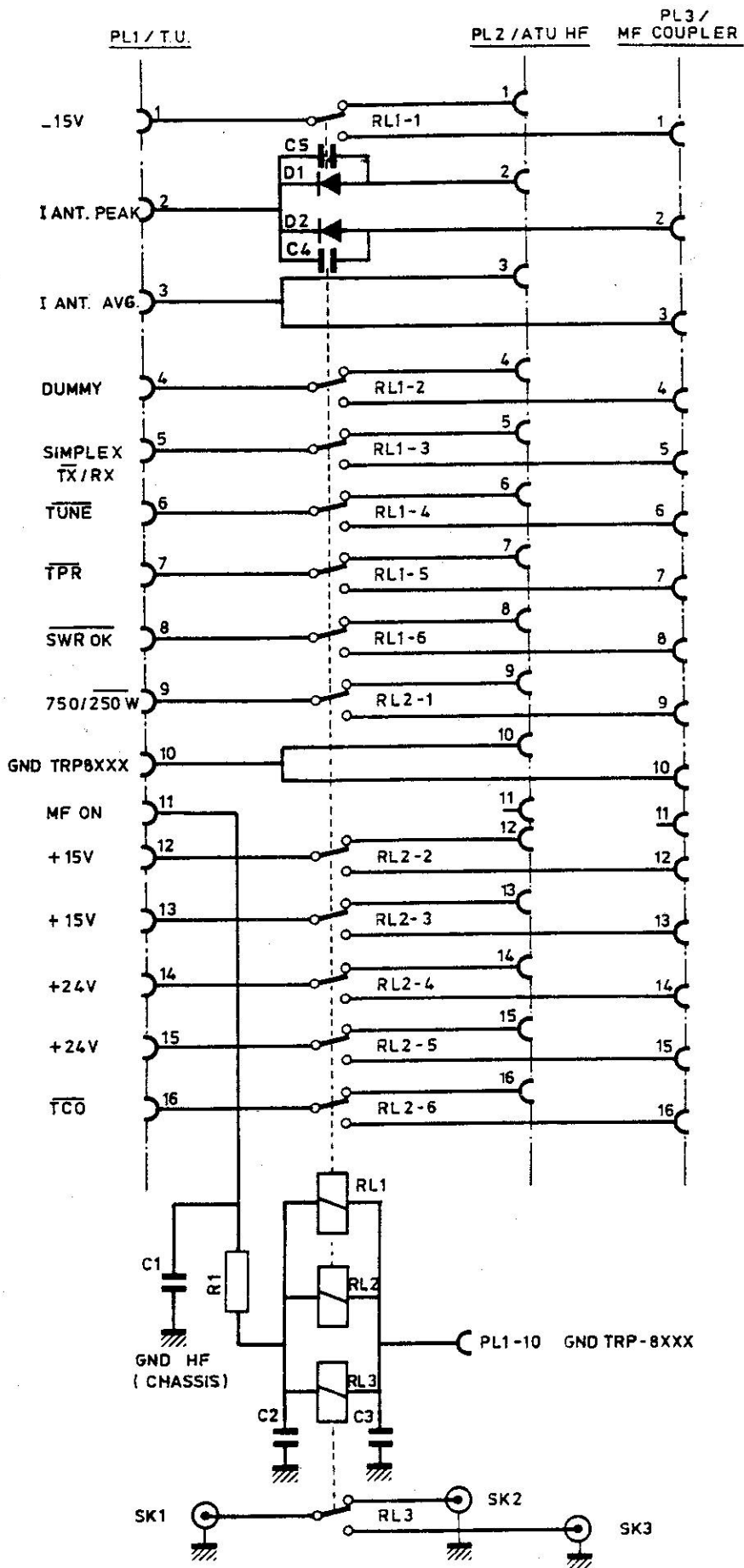


ATU BOARD - CIRCUIT LAYOUT



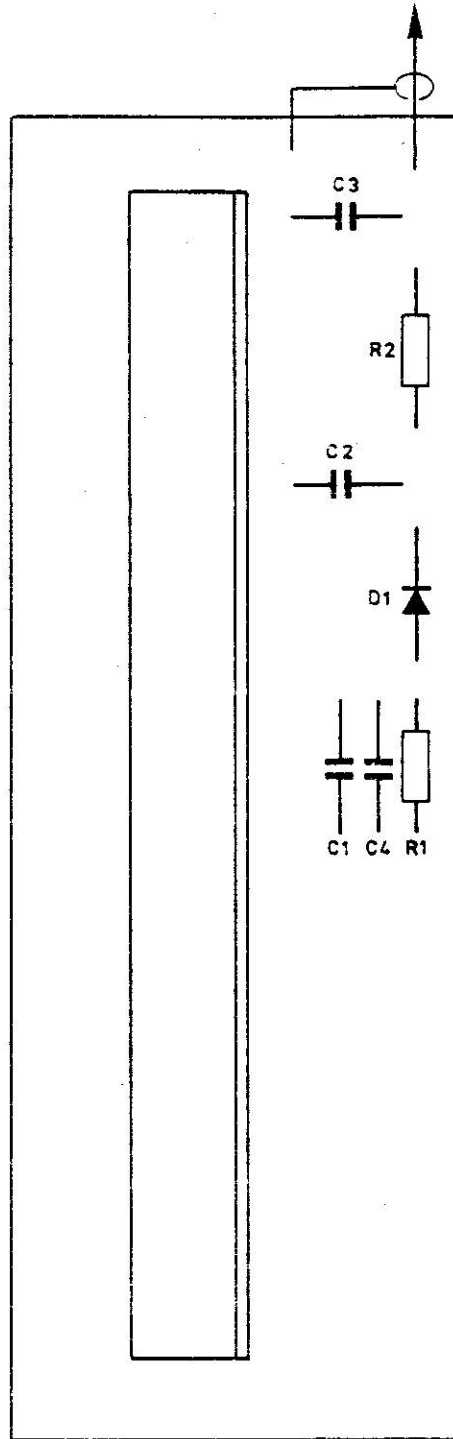
Viewed from components side

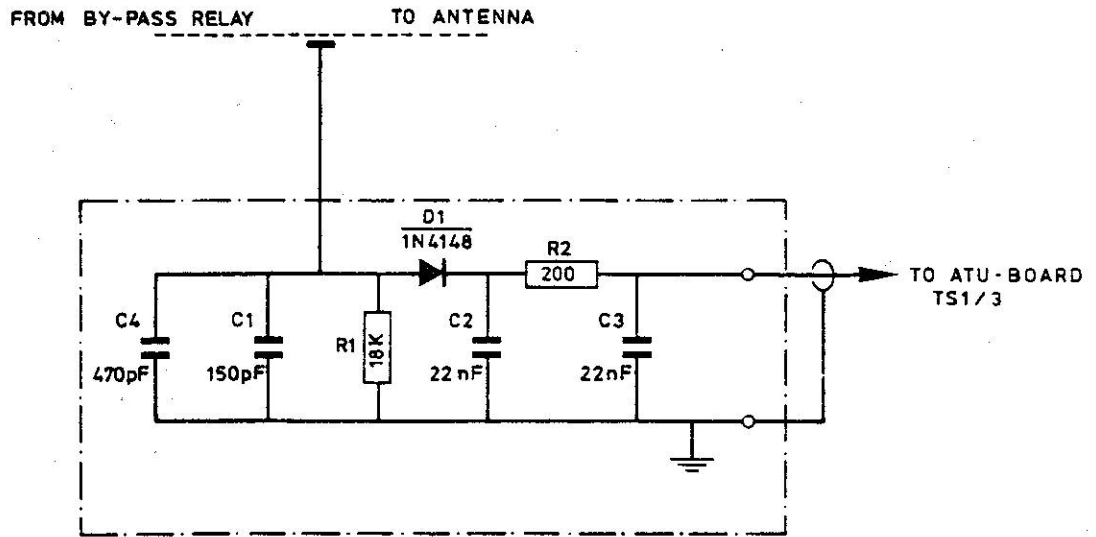


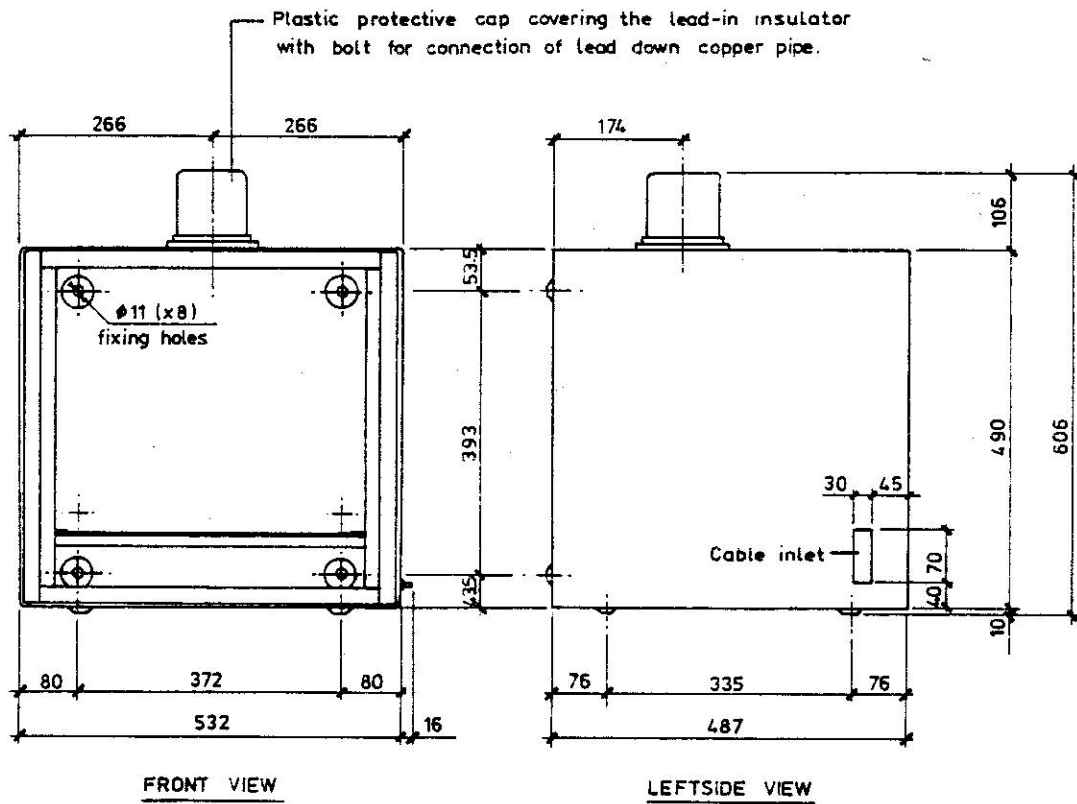


JUNCTION BOX -SCHEMATIC DIAGRAM

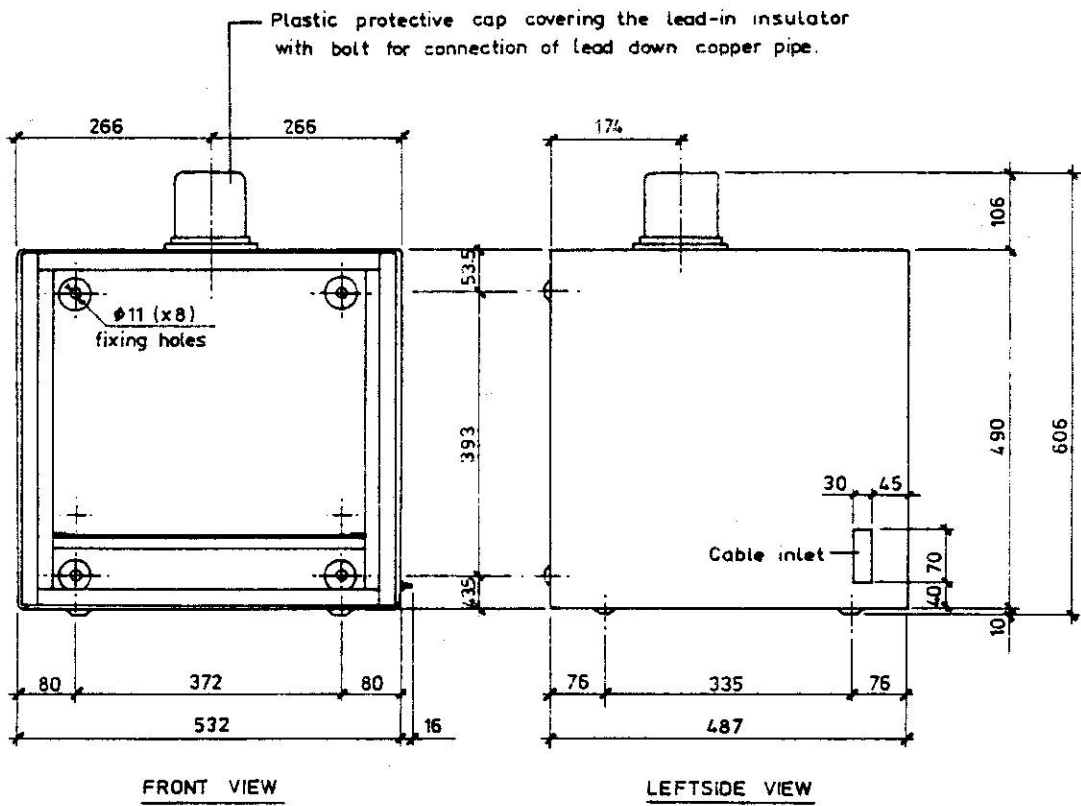
TO ATU-BOARD
TS 1 / 3



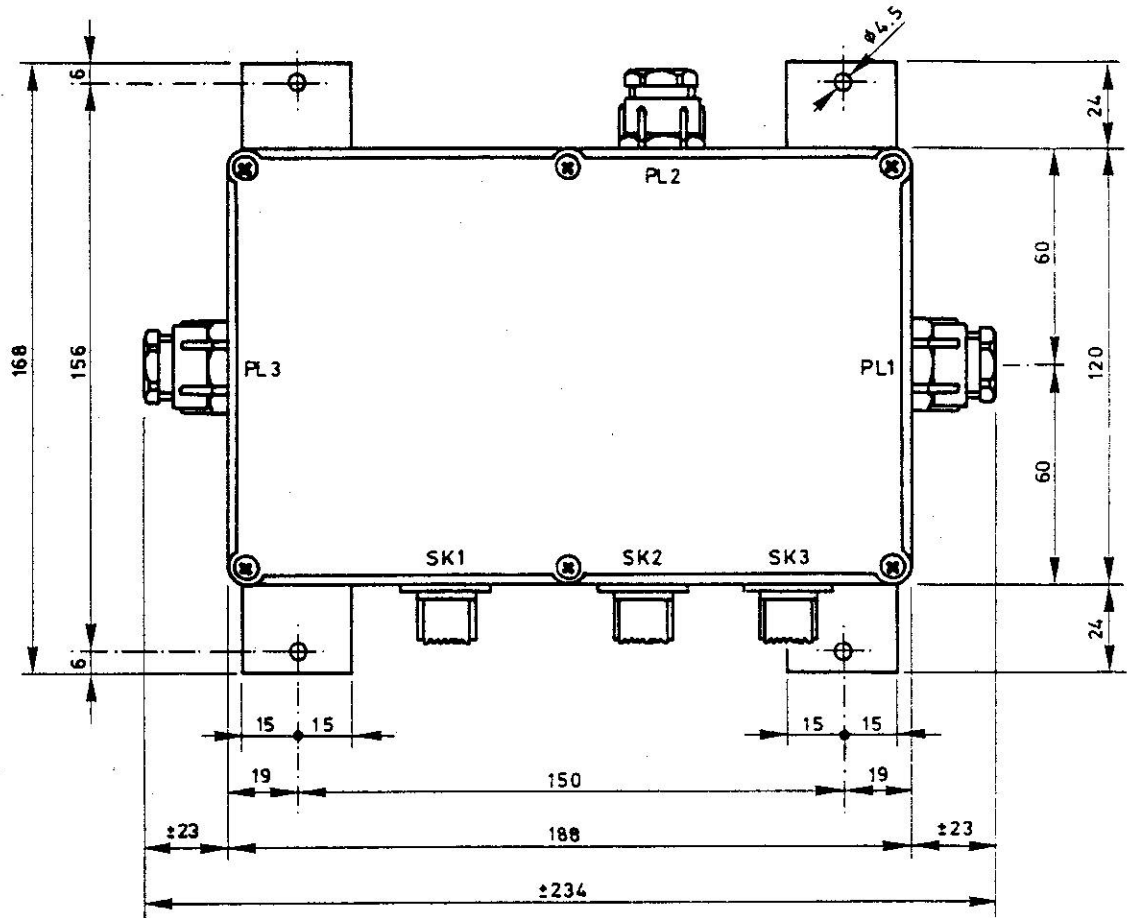




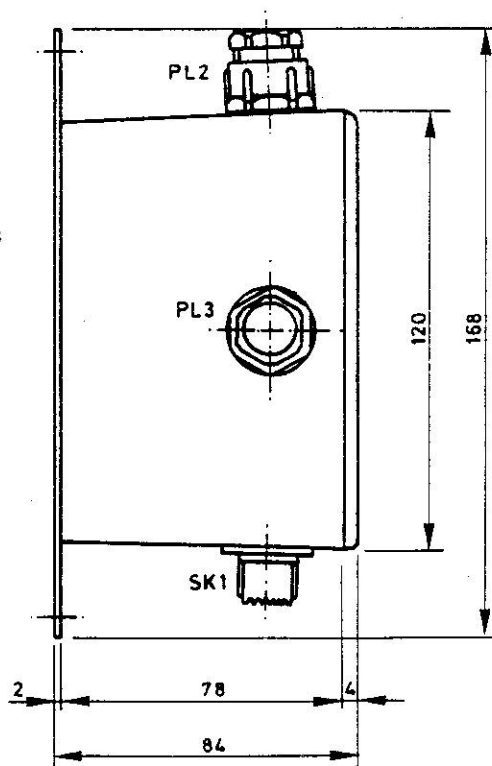
All dimensions are in mm



All dimensions are in mm



NOTE: PL1 - PL2 and PL3 are cable glands used for cable dia. 6 to 12mm



A D D E N D U M N° 1

SUPPRESSION OF SPURIOUS

1. GENERAL

Two modifications are brought to suppress the effects of spurious on the motor driver integrated circuit IC14 and on the signal issued to the receiver.

First modification consists in replacing R51 by a 5.6 Kohm resistor and R104 by two factory adjusted resistors mounted in parallel. Refer to dwg. no. 2182-10B and 2182-10-1-A.

Second modification consists in addition of a break-in relay PCB.

This board is detailed in the next section of present addendum.

2. BREAK-IN RELAY P.C.B.

2.1. General

Purpose of this board is to isolate the RX output from the TX input.

Therefore the TX line is opened during reception.

2.2. Installation

(see dwg. no. 2182-10-1A).

- PCB is mounted at the bottom of the main ATU PCB at the right of microprocessor board.
- RX output connector strap is suppressed and RX is directly connected to RX pin on PCB.
- Vario pin on PCB is wired to the input of variometer.
- ATU pin on PCB is wired to the output of T7.
- Pin 10 is connected to GND.
- Pin 5 goes to the D connector and further to TS1-5.
- Pin 15 goes to the D connector and further to TS1-15.

2.3. Principle of operation

(see dwg. no. 2182-10B).

Break-in relay RL1 is supplied by 24V issued from transceiver at pin TS1-5 by the $\overline{\text{TX}}$ /RX signal.

A low level ($\overline{\text{TX}}$) means that transmitting part of transceiver is enabled, ATU is connected to variometer.

A high level (RX) means that receiving part of transceiver is enabled, RX is connected to variometer.

2.4. Parts list

RESISTORS

R1	10K	0.35W	1%	MF	286.699
R2	3K	0.35W	1%	MF	286.689
R3	100K	0.35W	1%	MF	268.664
R4	300K	0.4W	2%	MF	269.737
R5	4700	0.35W	1%	MF	268.692

CAPACITORS

C1	10uF	100V	10%	Cer.	252.575
C2	1uF	50V	10%	Polyes.	254.669
C3	100nF	100V	20%	Cer.	252.583

DIODES

D1-2	1N4148				285.726
D3	1N4007				285.419

TRANSISTORS

TR1-2	BC107				285.302
TR3	BC140-16				287.008

INDUCTOR

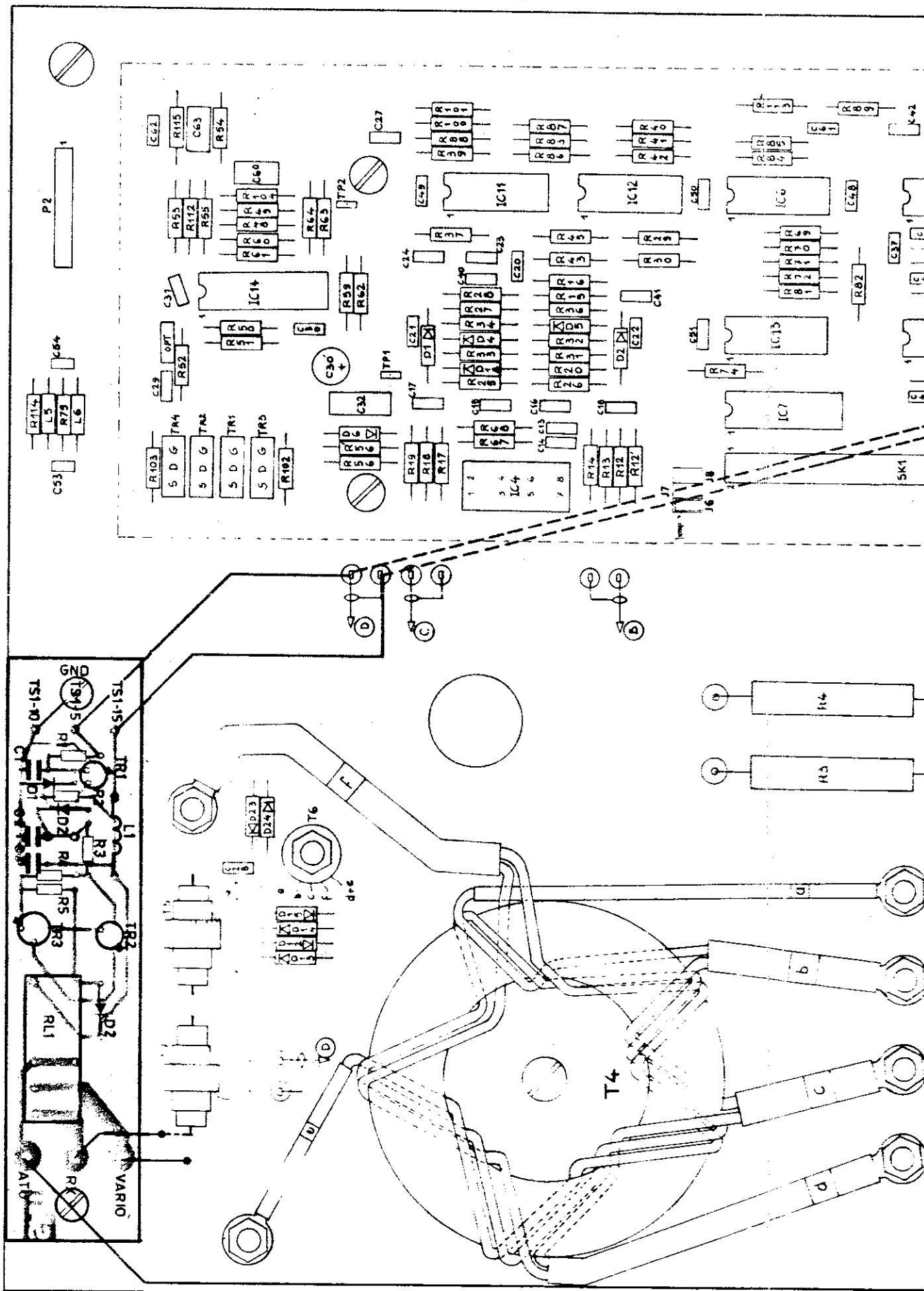
L1	4.7uH	Ferroperm			275.008
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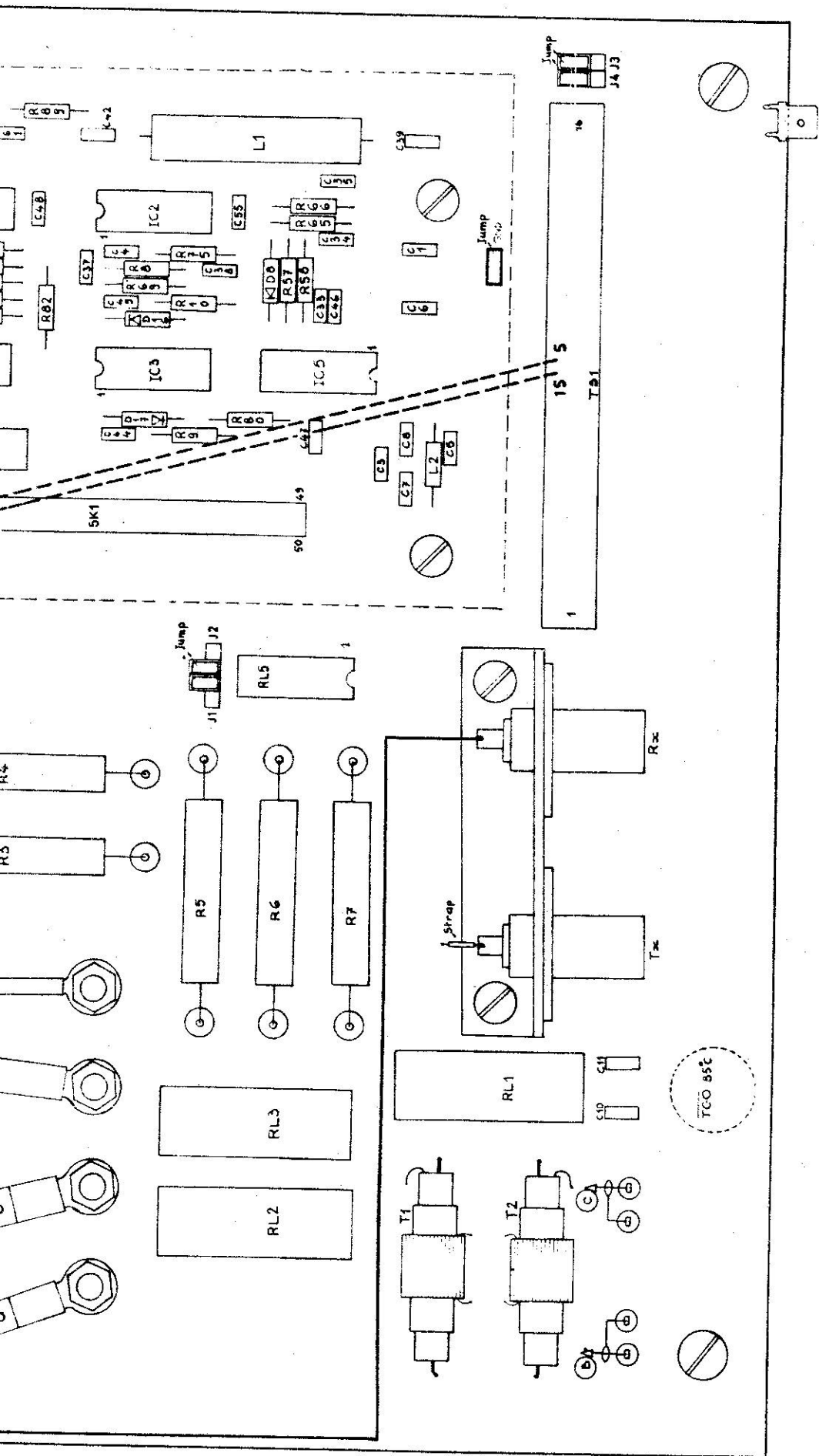
RELAY

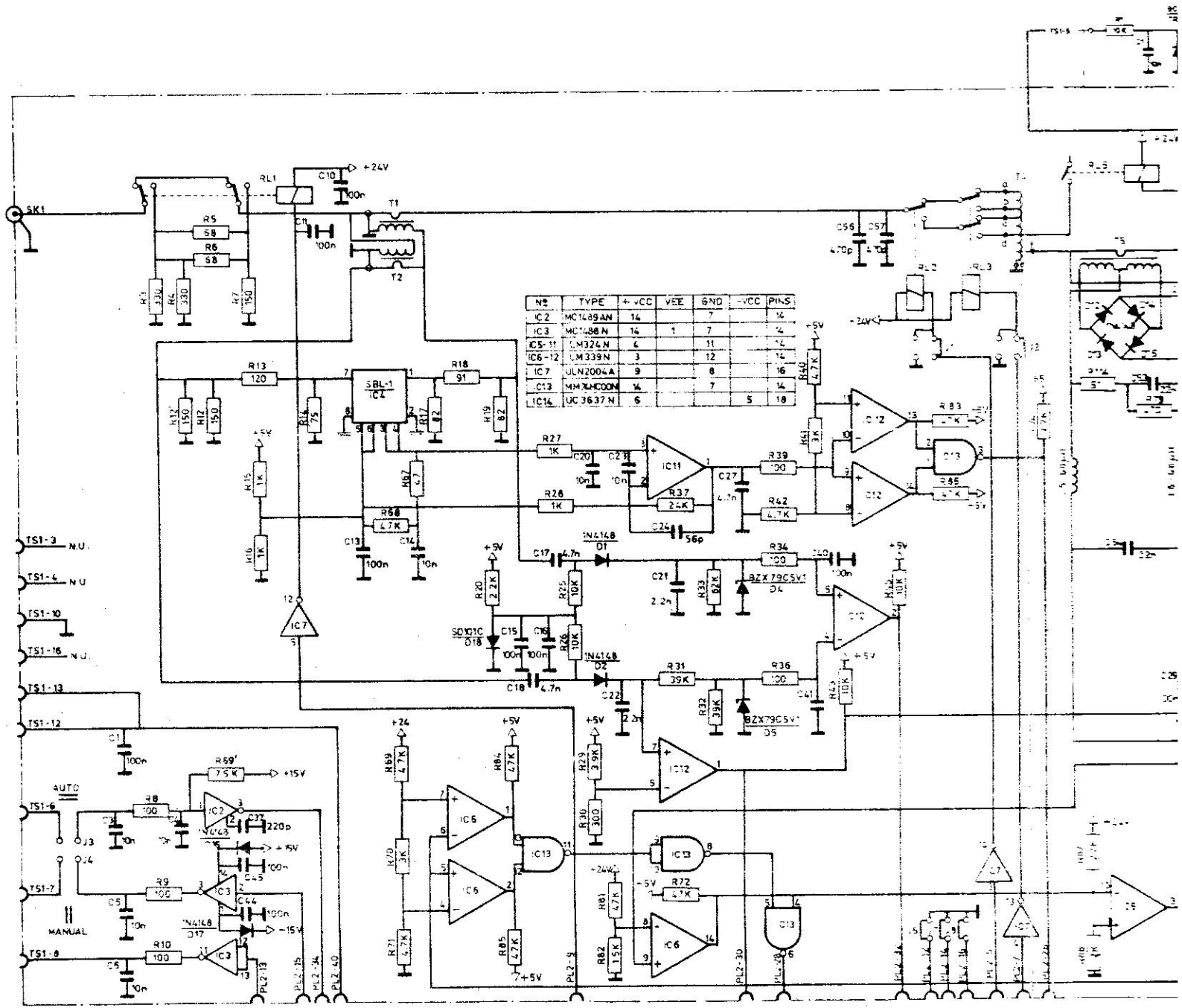
RL1	EBERLE	24VDC	2INV		279.612
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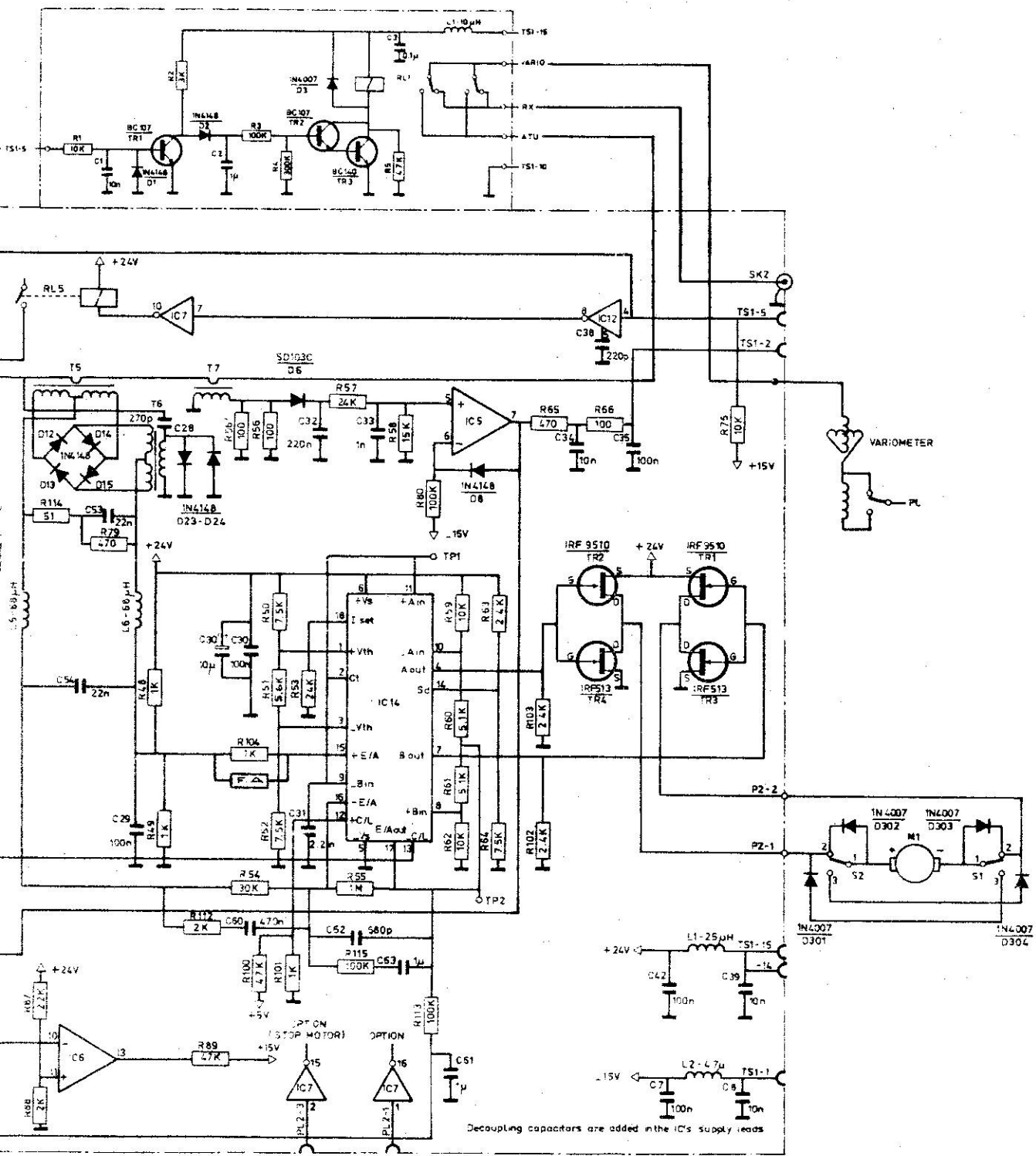
2.5. List of drawings

ATU board - schematic diagram	2182-10B
ATU board - circuit layout	2182-10-1A









Decoupling capacitors are added in the IC's supply leads