

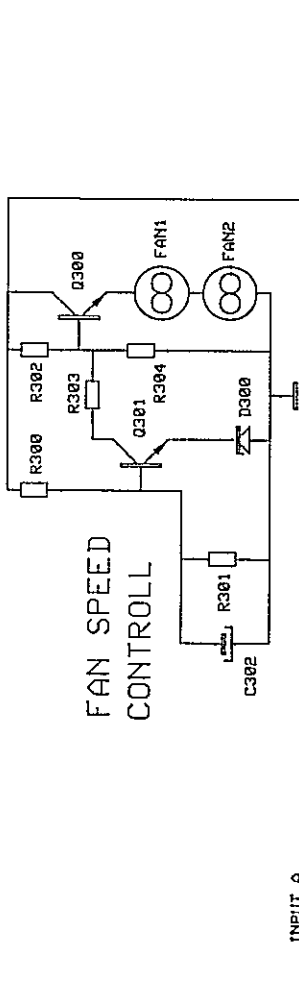
# **LAB 1000**

## **SERVICEMANUAL**

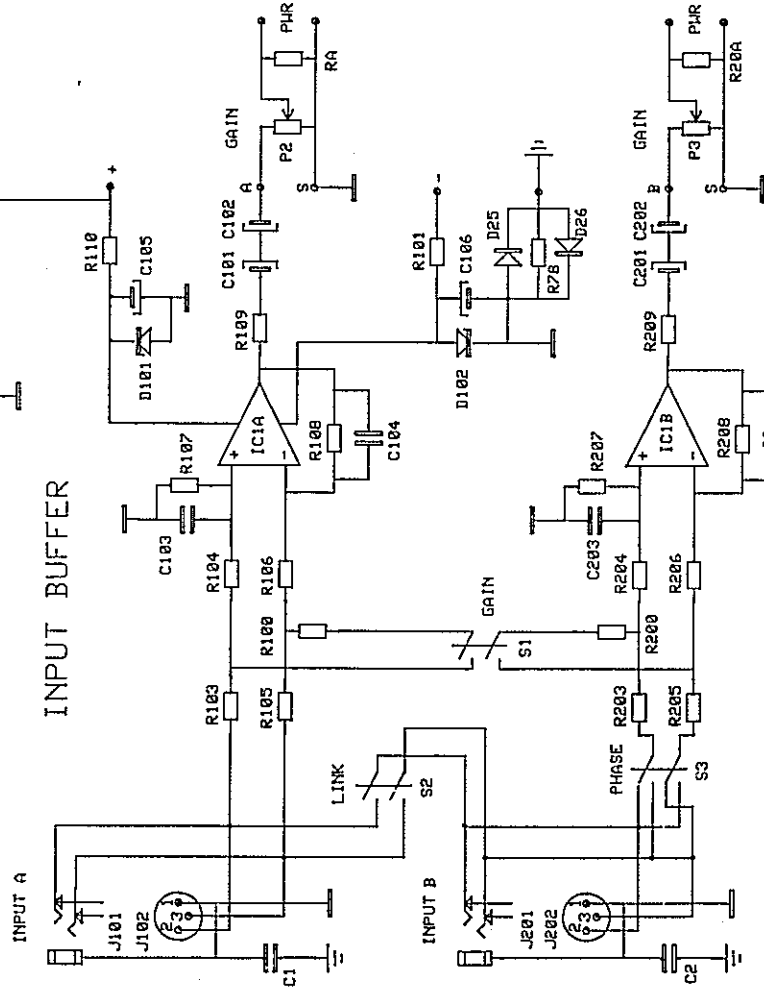
1996 EMC

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1-4.1	INPUT BUFFER & LED	L10INP	L10INP
5-7	LF-AMPLIFIER		

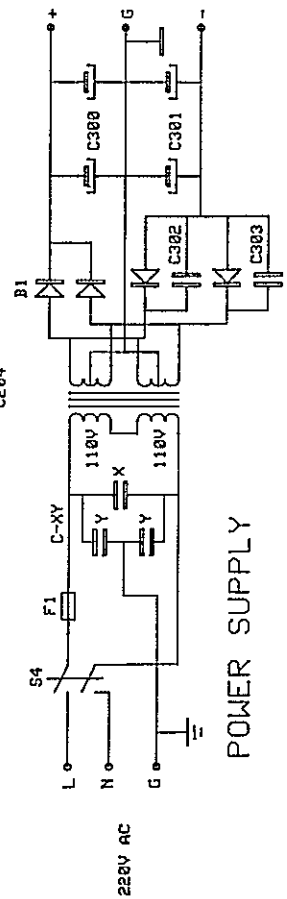
### FAN SPEED CONTROLL



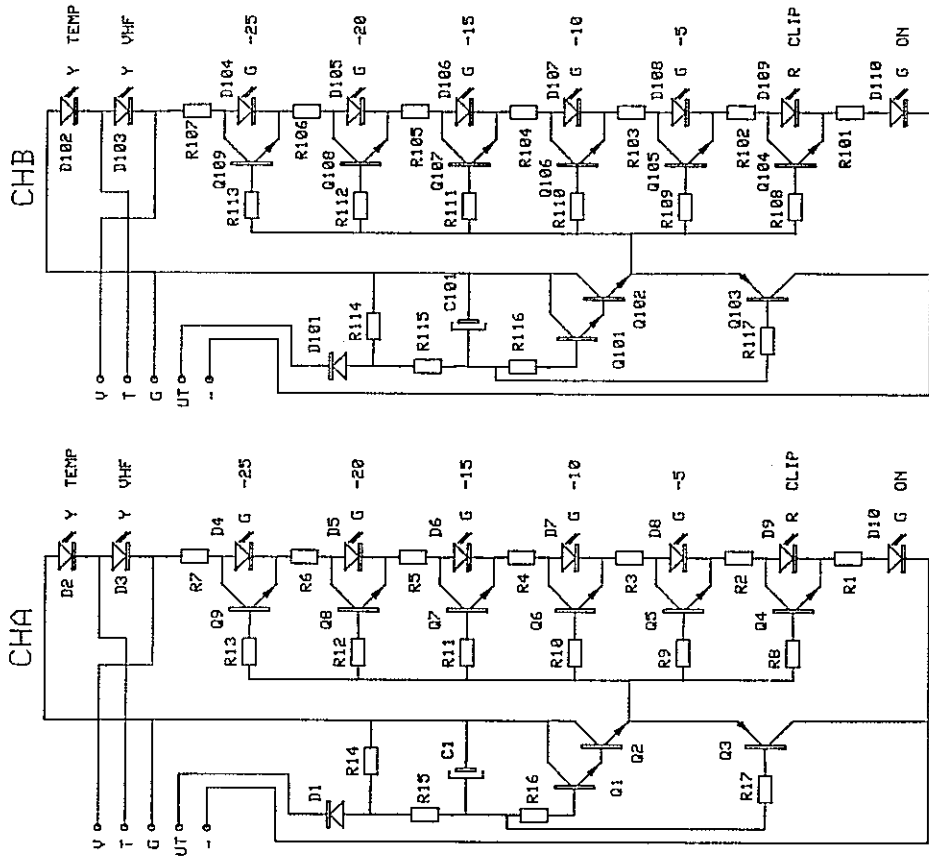
### INPUT BUFFER



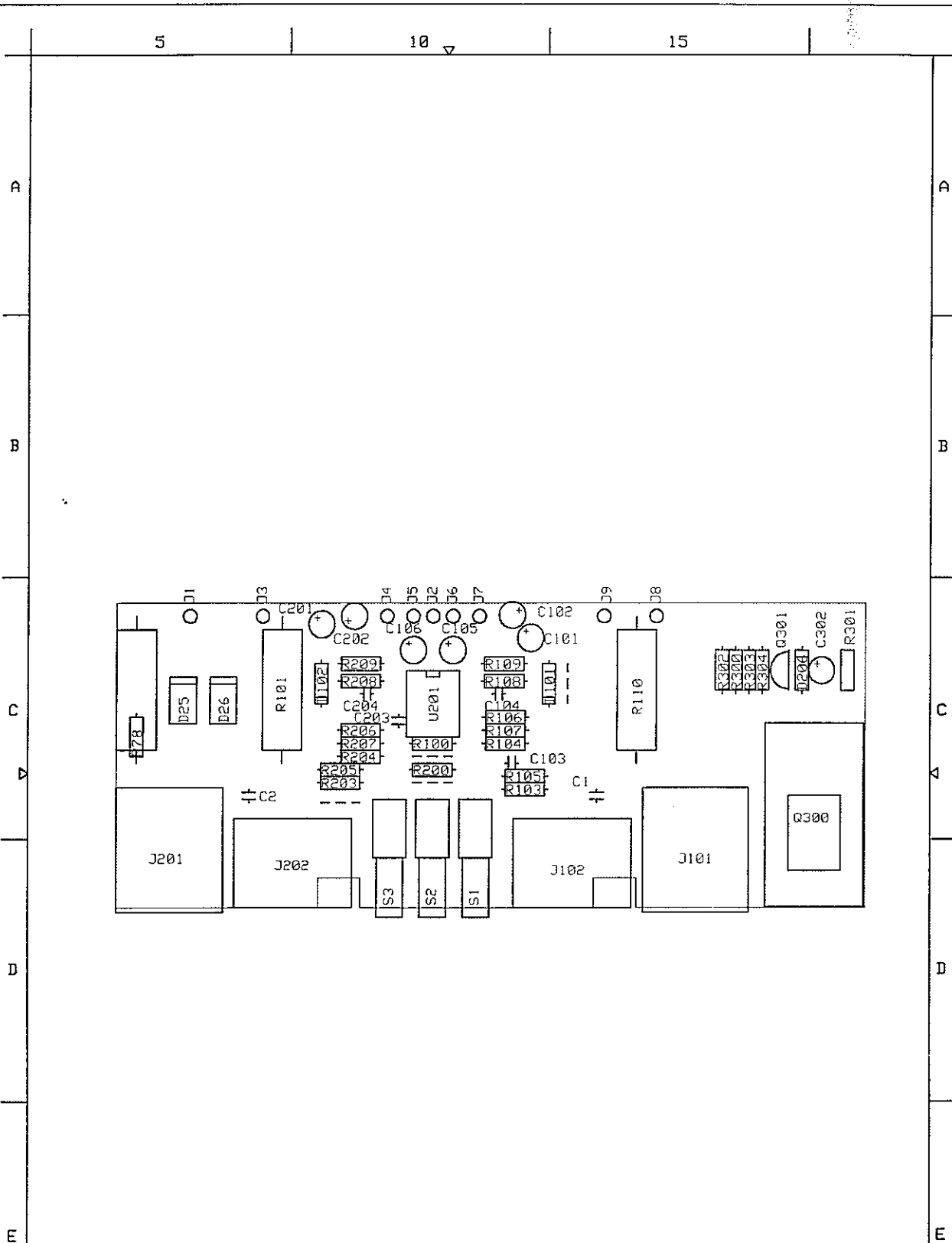
### POWER SUPPLY



### LED



DET.-NR	ANT	BENÄMNING	MATERIAL	ERSÄTT	ERSÄTT AV
KONSTR.	RITAD	KOP	KONTR.	STAND.	GODK.
	dB			SKALA	
LAB. GRUPPEN			POWER AMPLIFIER LAB 1000		
KUNGSBACKA SWEDEN			INPUT BUFFER & LED SCHEMATIC		
					RITN.-NR
					DATE
					L101NP

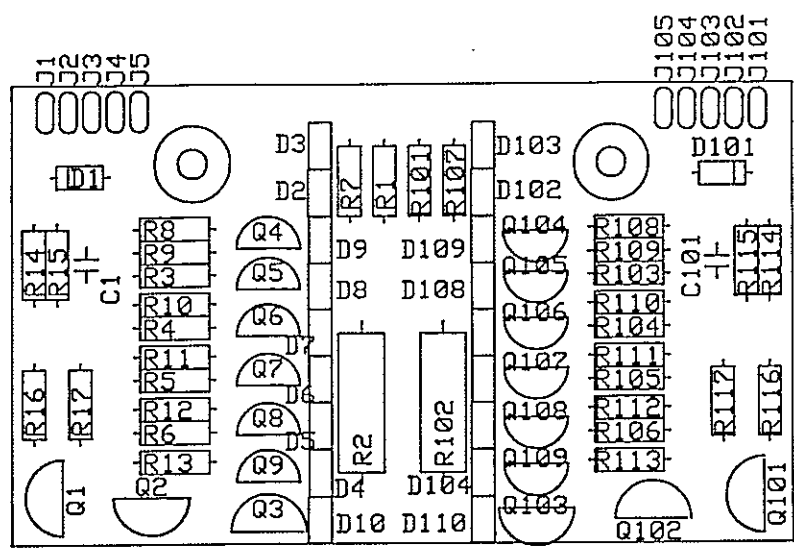


⚠	Design	Description	Included in	Machine
⚠		LAB 1000 Input board	LAB 1000	
⚠	Drawn		Release ECO	Release date
⚠	dB			
⚠	Checked		Replaces	Design rev.
⚠			Drawing no.	Page
⚠			L10inp	

# LAB.GRUPPEN

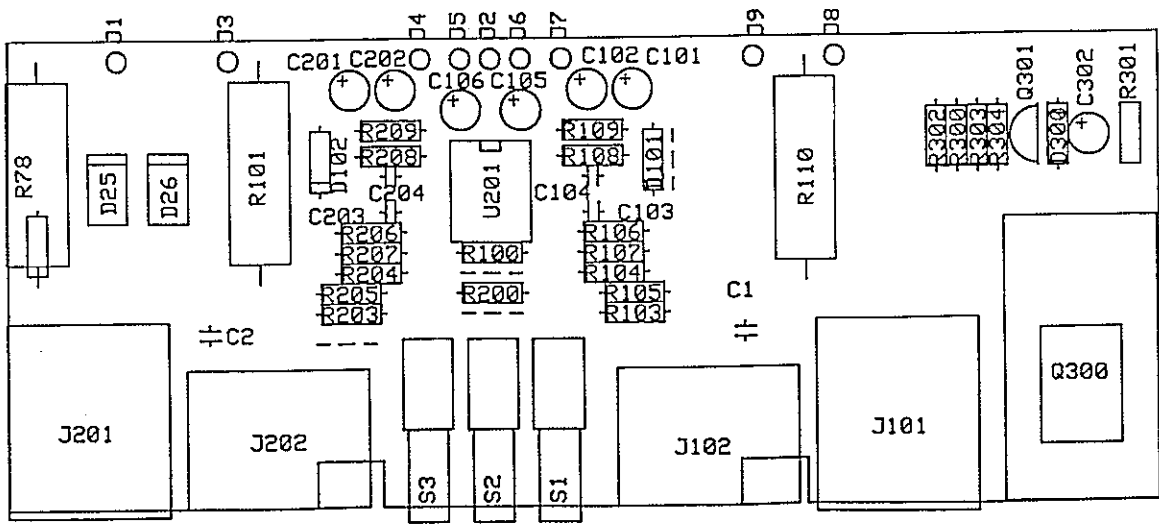
LAB 500, LAB 1000

LED DISPLAY



LAB 500, LAB 1000

INPUT BUFFER & FAN SPEED CONTROL



# LAB 1000

## INPUT AMPLIFIER

### FAN SPEED CONTROL, POWER SUPPLY

#### Component-list

#### Input amplifier

Channel A 100  
Channel B 200

#### Resistors

R100,R200 9,31 k $\Omega$  29 dB gain  
3,01 k $\Omega$  23 dB gain  
R103,R203 10 k $\Omega$  1%  
R104,R204 10 k $\Omega$  1%  
R105,R205 10 k $\Omega$  1%  
R106,R206 10 k $\Omega$  1%  
R107,R207 20 k $\Omega$  1%  
R108,R208 20 k $\Omega$  1%  
R109,R209 100  $\Omega$   
R101 4.7 K $\Omega$  3W  
R110 4.7 k $\Omega$  3W  
R78 10 $\Omega$

#### Capacitors

C101,201 47  $\mu$ F 25 V  
C102,202 47  $\mu$ F 25 V  
C103,203 150 pF ker  
C104,204 150 pF ker  
C105 47  $\mu$ F 25 V  
C106 47  $\mu$ F 25 V  
C1 0,1 $\mu$ F 63V  
C2 0,1 $\mu$ F 63V

#### Connectors

J102,202 3 pol XLR Neutrik  
NC3 FDH BAG  
J101,201 3 pol telejack Cliff  
S2/BBB/PC

#### Diodes

D101 15V 0.4W Zener  
D102 15V 0.4W Zener  
D25 1N 5404  
D26 1N 5404

#### Integrated Circuits

IC1 LF 353

#### Switches

S1 ALPS SPP J3  
S2 ALPS SPP J3  
S3 ALPS SPP J3

#### Potentiometers

P2 10 k $\Omega$  lin Tokos  
P3 10 k $\Omega$  lin Tokos  
RA 10 k $\Omega$  1%  
R20A 10 k $\Omega$  1%

#### Fan Speed control

##### Resistors

R300 560k $\Omega$   
R301 220k $\Omega$  NTC  
R302 4,7k $\Omega$  0,7W on legs  
R303 1,8k $\Omega$   
R304 10k $\Omega$  0,7W

##### Capacitors

C302 22 $\mu$ F 50V

##### Diodes

D300 5,6V 0,4W

##### Transistors

Q300 TIP 41  
Q301 BC 546

##### Fans

Fan1  
Fan2

##### Power Supply

S4 Marquart 1832.3902  
F1 T 8A  
B1 Bridge 25a/400V  
C300 18000 $\mu$ F 100V  
C301 18000 $\mu$ F 100V  
C302 0,22 $\mu$ F 250V  
C303 0,22 $\mu$ F 250V  
C-XY 2x2,7 $\mu$ F+0.1 $\mu$ F 250V  
T1 Transformer  
2ED4001

# LAB 500 – 2000C

## LED DISPLAY

### Component-list

Channel A  
(Ch. B add 100)

**Resistors**

- R1 see below
- R2 2.7 kΩ 3W
- R3 1.2 kΩ 1W
- R4 680 Ω
- R5 330 Ω
- R6 120 Ω
- R7 220 Ω
- R8 33 kΩ
- R9 33 kΩ
- R10 33 kΩ
- R11 33 kΩ
- R12 33 kΩ
- R13 33 kΩ
- R14 33 kΩ
- R15 100 Ω 1%
- R16 2.7 kΩ
- R17 2.7 kΩ

**Capacitors**

- C1 4.7 μF 100V

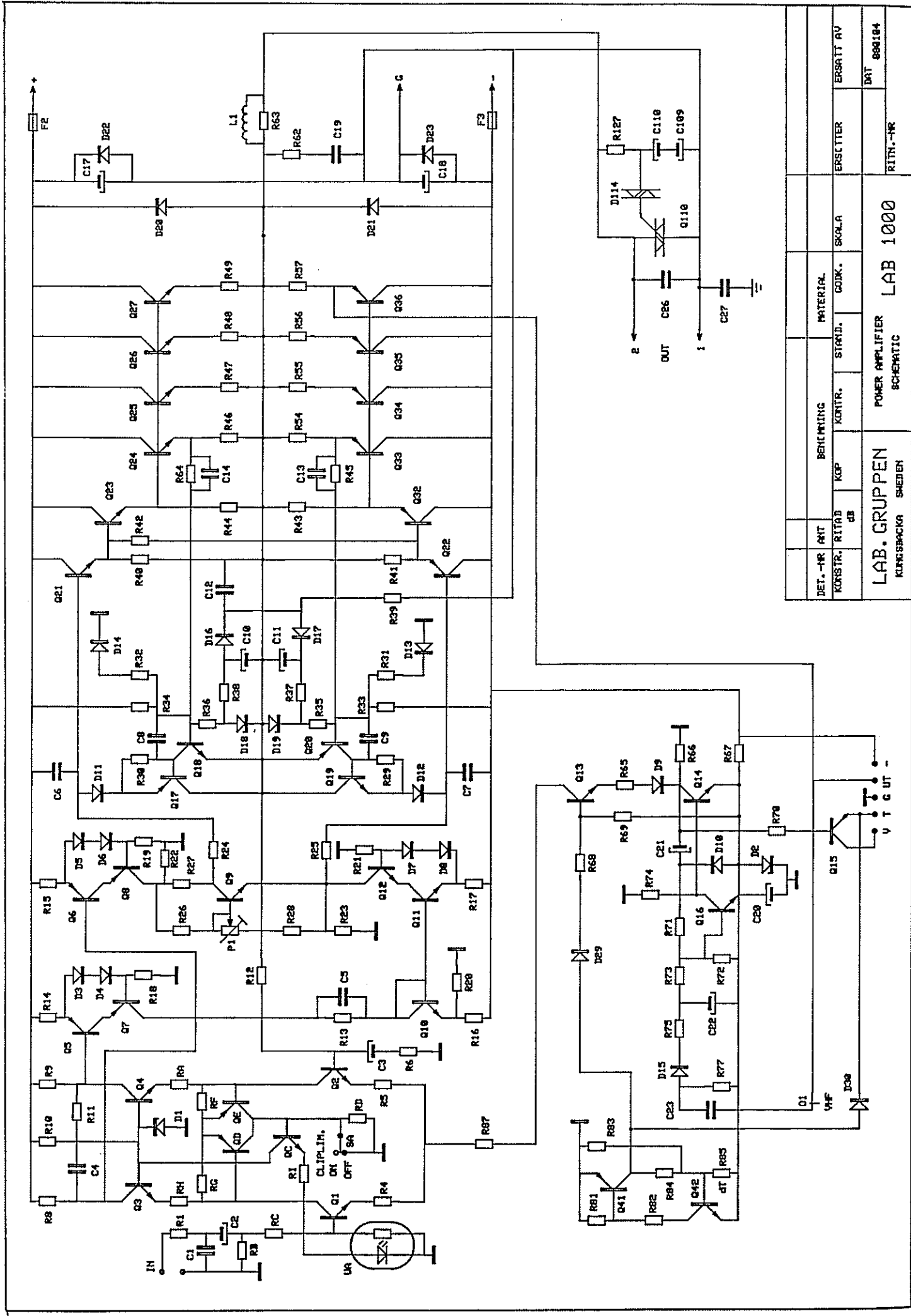
**Diodes**

- D1 1N 4004
- D2 Led Y
- D3 Led Y
- D4 Led G
- D5 Led G
- D6 Led G
- D7 Led G
- D8 Led G
- D9 Led R
- D10 Led G

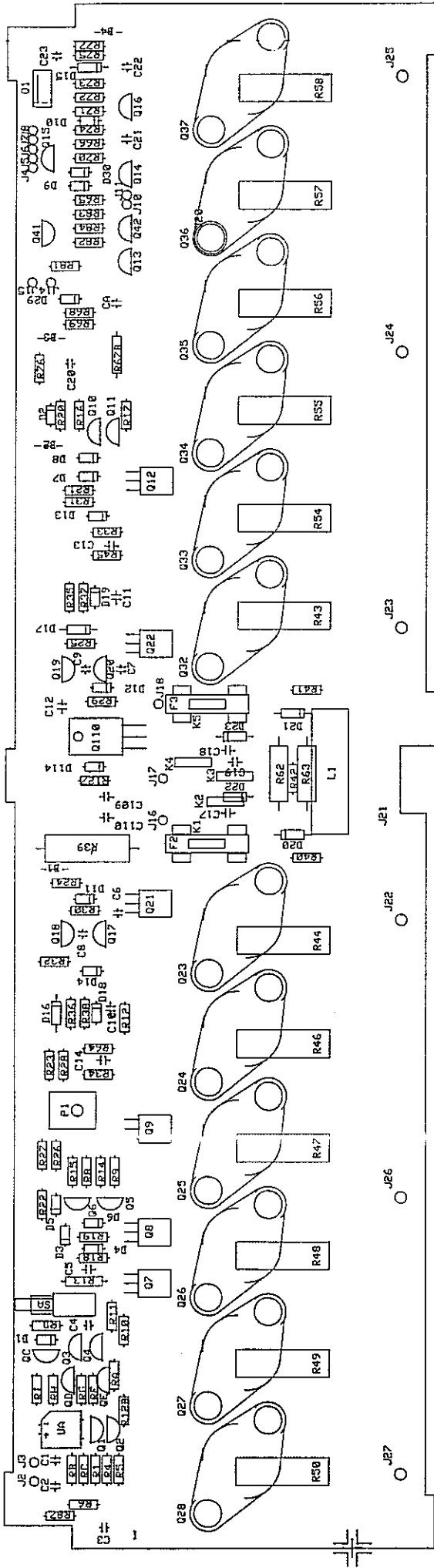
**Transistors**

- Q1 MPSA 42
- Q2 MPSA 42
- Q3 MPSA 92
- Q4 BC 547
- Q5 BC 547
- Q6 BC 547
- Q7 BC 547
- Q8 BC 547
- Q9 BC 547

	500	1000	1300C	1600	2000
R1	1,5 kΩ	820 Ω	680Ω	680Ω	680 Ω 1% long legs



DET.-NR ANT	BENÄMNING	MATERIAL	ERSÄTT AV
KONSTR. RITAD CB	KONTR.	STAND.	SKALA
LAB. GRUPPEN KUNGSBACKA SVEDEN		POWER AMPLIFIER SCHEMATIC	
LAB 1000		ERSÄTT	RITN.-NR
		ERSÄTT	DAT 888194



KONSTR.	RITAD	KOP	KONTR.	STAND.	GODK.	SKALA	ERSÄTTAR	ERSÄTT AV
LABGRUPPEN								
KUNGSBACKA SVEJEN			LAB1000	LAB1300				
			LAB1500	POWER AMPLIFIER				
							RITN.-NR	DAT



# LAB 1000

## LF-AMPLIFIER

### Component-list

#### Resistors

R1 2.2 k $\Omega$   
 R4 47  $\Omega$   
 R5 47  $\Omega$   
 R6 422  $\Omega$  1%  
 R8 1 k $\Omega$  1%  
 R9 1 k $\Omega$  1%  
 R10 10 k $\Omega$  1%  
     0.7W on legs  
 R11 1.8 k $\Omega$   
 R12 33 k $\Omega$  1%  
 R13 12 k $\Omega$  1W  
 R14 100  $\Omega$  1%  
 R15 100  $\Omega$  1%  
 R16 100  $\Omega$  1%  
 R17 100  $\Omega$  1%  
 R18 82 k $\Omega$   
 R19 82 k $\Omega$   
 R20 82 k $\Omega$   
 R21 82 k $\Omega$   
 R22 27 k $\Omega$   
 R23 27 k $\Omega$   
 R24\* 180  $\Omega$   
 R25 220  $\Omega$   
 R26 10 k $\Omega$   
 R27\* 47  $\Omega$   
 R28\* 1.5 k $\Omega$  1%  
 R29 4.7 k $\Omega$   
 R30 4.7 k $\Omega$   
 R31 100 k $\Omega$   
 R32 100 k $\Omega$   
 R33 1 M $\Omega$   
 R34 1 M $\Omega$   
 R35 100 k $\Omega$   
 R36 100 k $\Omega$   
 R37 10 k $\Omega$   
 R38 10 k $\Omega$   
 R39 820  $\Omega$  5W  
 R40 150  $\Omega$   
 R41 150  $\Omega$   
 R42 100  $\Omega$   
 R43 4.7  $\Omega$  5W  
 R44 4.7  $\Omega$  5W  
 R45 2.2 k $\Omega$   
 R46 0.33  $\Omega$  5W  
 R47 0.33  $\Omega$  5W  
 R48 0.33  $\Omega$  5W  
 R49 0.33  $\Omega$  5W  
 R54 0.33  $\Omega$  5W  
 R55 0.33  $\Omega$  5W  
 R56 0.33  $\Omega$  5W  
 R57 0.33  $\Omega$  5W  
 R62 10  $\Omega$  3W  
 R63 10  $\Omega$  3W  
 R64 2.2 k $\Omega$   
 R65 1.5 k $\Omega$  1%  
 R66 56 k $\Omega$

R67 12 k $\Omega$  1W  
 R68 100 k $\Omega$   
 R69 56 k $\Omega$   
 R70 33 k $\Omega$  1%  
 R71 220 k $\Omega$   
 R72 100 k $\Omega$   
 R73 220 k $\Omega$   
 R74 56 k $\Omega$   
 R75 10 k $\Omega$   
 R76 10  $\Omega$   
 R77 10 k $\Omega$   
 R81 3.3 k $\Omega$   
 R82 22 k $\Omega$   
 R83 150 k $\Omega$  1%  
 R84 1 M $\Omega$   
 R87 2.2 k $\Omega$   
 R127 220 k $\Omega$   
 RA 1.5 k $\Omega$  1%  
 RB 15 k $\Omega$   
 RC 15k $\Omega$   
 RD 150 k $\Omega$   
 RF 27 k $\Omega$   
 RG 27 k $\Omega$   
 RH 1.5 k $\Omega$  1%  
 RI 1.5 k $\Omega$  1%

#### Thermistors

R85 150 k $\Omega$  NTC

#### Potentiometers

P1 1 k $\Omega$

#### Capacitors

C1 150 pF ker  
 C2 4.7  $\mu$ F 35V  
 C3 100  $\mu$ F 10V  
 C4 680 pF ker  
 C5 22 nF 250V  
 C6 150 pF ker  
 C7 150 pF ker  
 C8 470 pF ker  
 C9 470 pF ker  
 C10 1  $\mu$ F 100V  
 C11 1  $\mu$ F 100V  
 C12 22 nF 250V  
 C13 1 nF  
 C14 1 nF  
 C17 4.7  $\mu$ F 100V  
 C18 4.7  $\mu$ F 100V  
 C19 0.1  $\mu$ F 400V  
 C20 220  $\mu$ F 16V  
 C21 10  $\mu$ F 50V  
 C22 4.7  $\mu$ F 50V

C23 39 pF ker  
 C26 10nF 400V  
 C27 100nF 100V  
 C109 4.7  $\mu$ F 100V  
 C110 4.7  $\mu$ F 100V

#### Diodes

D1 15 V Zener 0.4W  
 D2 15 V Zener 0.4W  
 D3 1N 4148  
 D4 1N 4148  
 D5 1N 4148  
 D6 1N 4148  
 D7 1N 4148  
 D8 1N 4148  
 D9 1N 4148  
 D10 1N 4148  
 D11 1N 4148  
 D12 1N 4148  
 D13 BAV 21  
 D14 BAV 21  
 D15 1N 4004  
 D16 1N 4004  
 D17 1N 4004  
 D18 27 V Zener 0.4W  
 D19 27 V Zener 0.4W  
 D20 1N 4004  
 D21 1N 4004  
 D22 1N 4004  
 D23 1N 4004  
 D29 1N 4148  
 D30 1N 4148  
 D114 HS 10, diac 10V

#### Transistors

Q1 BC 547B selected  
 Q2 BC 547B selected  
 Q3 MPSA 42  
 Q4 MPSA 42  
 Q5 BC 557B  
 Q6 BC 557B  
 Q7 MJE 350  
 Q8 MJE 350  
 Q9\* BD329  
 Q10 BC 547B  
 Q11 BC 547B  
 Q12 MJE 340  
 Q13 BC 547B  
 Q14 BC 547B  
 Q15 BC 557B  
 Q16 BC 547B  
 Q17 BC 557B  
 Q18 BC 547B  
 Q19 BC 547B

Q20 BC 557B  
 Q21 MJE 340  
 Q22 MJE 350  
 Q23 MJ 15022  
 Q24 MJ 15022  
 Q25 MJ 15022  
 Q26 MJ 15022  
 Q27 MJ 15022  
 Q32 MJ 15023  
 Q33 MJ 15023  
 Q34 MJ 15023  
 Q35 MJ 15023  
 Q36 MJ 15023  
 Q41 BC 557B  
 Q42 BC 547B  
 QC BC 547  
 QD BC 557  
 QE BC 557

#### Tyristors

Q110 Q4015L5

#### Optoresistors

UA VTL5C4

#### Inductors

L1 -

#### Fuses

F1 T6.3A  
 F2 T6.3A

#### Switches

SA SPPJ3 Alps  
 O1 A1347 Siemens

\* **Until 9801**

R24 120  $\Omega$   
 R27 82  $\Omega$   
 R28 1.8 k $\Omega$   
 Q9 MJE 340