I M P O R T A N T

PLEASE READ THIS PAGE BEFORE OPERATING

YOUR

BOSE 1800 POWER AMPLIFIER

Your new Bose 1800 amplifier is designed to provide years of trouble free performance.

Observing these few precautions will insure proper operation.

- All connections should be made to the power amplifier with the power OFF.

  Never connect the output of one channel to that of another.

- Connect the power cord to the proper voltage mains as indicated on the rear of the amplifier.

- Do not remove the ampifier's cover. Amplifiers may not be covered under warranty if they are tampered with.
  Potentially lethal voltages exist within the amplifier.
  Refer all service work to an authorized BOSE service station.

The BOSE 1800 amplifiers have individual power supplies for each channel. They combine an excellent solidity and reliability with an excellent performance and protection.

DESCRIPTION

The BOSE 1800 amplifier is designed with two low noise high speed op-amps per channel, followed by a heat sink mounted bias circuit, to provide precise temperature compensation; and a full complementary output stage, featuring ten 200 watt transistors in each channel (2000 watt total dissipation capability per channel).

The power and drive-transistors are mounted on two heatsinks with "SIL-PADS" for superior long life heat transmission.

The "SIL-PAD" is a new product, specially developed for this purpose and gives a better heat transmission and has a much longer life than the conventional method with mica-isolators and silicon paste.

Experience has proved, that after some time, by drying of silicone paste, the heat transmission reduces strongly and power devices are "blown" without even delivering maximum power.

The "SIL-PAD" prevents such a breakdown.

A 2-speed temperature operated ultra low noise fan is build in for optimal cooling. With specially designed alluminium profiles, the BOSE 1800 amplifier is very solid and really capable of handling heavy road conditions.

FRONT PANEL

The BOSE 1800 amplifier is provided with a led-indication, showing the cause of trouble or misuse in various situations.

Besides the usual clip-indication, each channel has a led for:

a) heavy overload/speaker short-circuit,
b) overheating.

In case, a or b, the leds illuminate, this also means that the specific protection is working and the amplifier delivers no power into the load until the situation is within acceptable limits again.

The BOSE 1800 amplifier also protects your (expensive) loudspeakersystem against switching peaks or D.C. current. Approximately 3-5 seconds after switching on the mains power, the load is coupled to the amplifier. When switching off mains, in case of mains-failure or D.C. at the output, the load is decoupled very quickly.

REAR PANEL

On the rear panel you will find two inputs per channel.

a) One three pin XLR for balanced and unbalanced mode.

b) One phone jack, only for unbalanced mode.

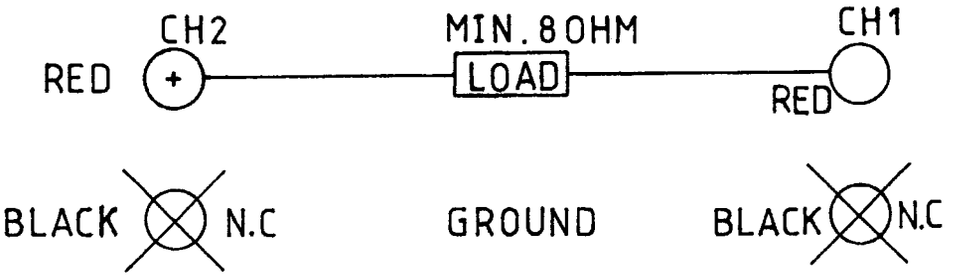
When using the phone jack, pin two of the XLR will automatically be connected to ground.

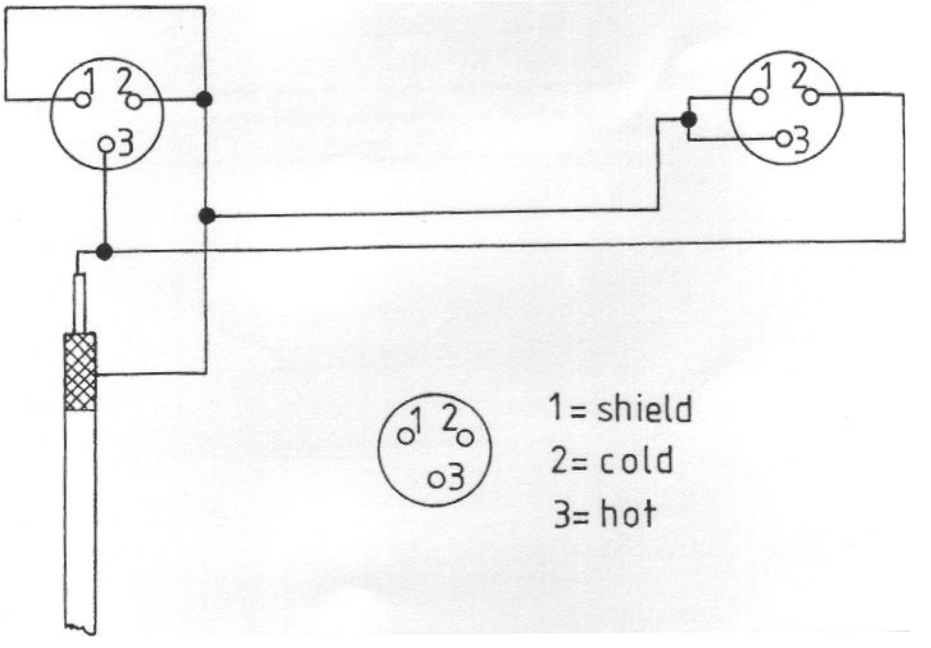
If desired, signal ground can be separated from chassis ground, by switching ground lift.

SPECIFICATIONS: BOSE 1800 AMPLIFIER.

Output power	-	2 x 280 W in 8 ohms 2 x 425 W in 4 ohms
Frequency range	-	10 Hz - 20 kHZ, ± 1 dB
T.H.D.	-	better than 0,08%. 30 V in 8 ohms 20 Hz - 20 kHZ
I.M.D.	-	better than 0,03 %
Different frequency distortion	-	better than 0,03 %
Crosstalk	-	better than -90 dB
Input Impedance	-	15 kohms
Input sensitivity	-	1,55 V for max. output
Damping factor	-	better than 230:1, 1kHZ in 8 ohms
Slew rate	-	better than 30V/usec.
Protection against	-	switching peaks, heavy overload, short circuit DC and overheating
Inputs	-	balanced XLR/unbalanced phone jack
Potmeters	-	Bourns conductive plastic
Cooling	-	2-speed temperature operated low noise fan
Power supplies	-	2 x 500 VA. toroïdal transformers
Housing	-	19" rackmounting 13" deep 4 HE high

BOSE reserves the right to change specifications without prior notice.





BRIDGED MODE OPERATION.

OUTPUT:

Connect speakers across the two red binding posts.
Channel II output is +.

DO NOT CONNECT THE SPEAKERS TO GROUND!

Minimum load impedance should be 8 ohms.

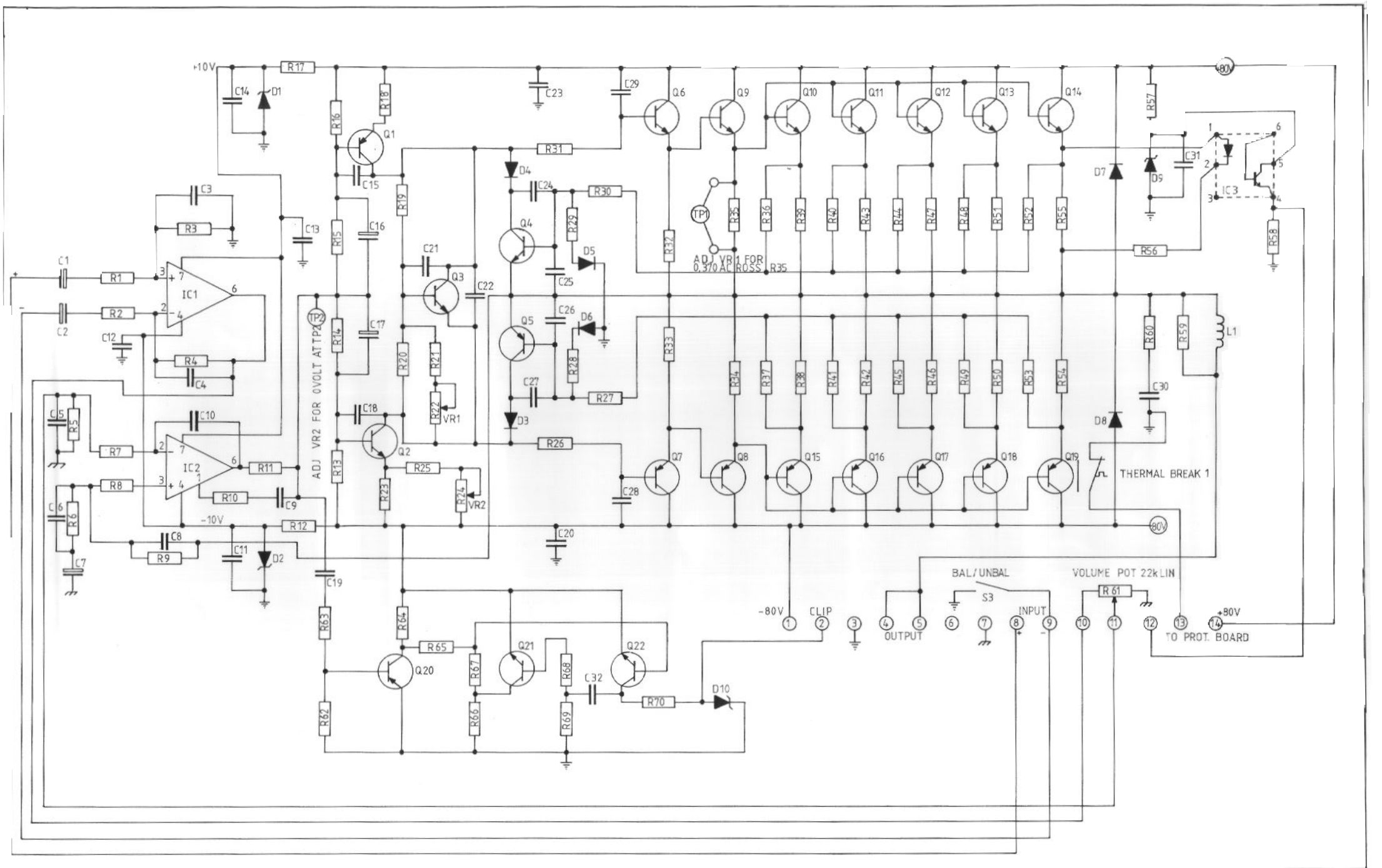
INPUT :

Connect input signal cord to pin 3 (hot) at input channel II and also to pin 2 (cold) at input channel I.

Connect shield of input signal cord to pin 1 and 2 of channel II and also to pin 1 and 3 of channel I.

Set ground lift "off".

Set both potentio-meters at maximum volume.



BOSE 1802 AMPLIFIER BOARD	note:	
	A4	number: 1
designer: H. Schouten		
drawn: P.S van Alphen	date: 13-04-84	

NO.	CAPACITORS
C 1	10UF 35V TANTALUM
C 2	10UF 35V TANTALUM
C 3	33PF CERAMIC
C 4	33PF CERAMIC
C 5	220PF CERAMIC
C 7	1000UF 16V ELECTROLYTIC
C 8	120PF CERAMIC
C10	33PF CERAMIC
C11	100NF 250V
C12	100NF 250V
C13	100NF 250V
C14	100NF 250V
C18	22UF 100V ELECTROLYTIC
C19	120PF CERAMIC
C20	10UF 35V
C21	22UF 100V ELECTROLYTIC
C22	10U 16V TANTALUM
C23	10UF 35V
C24	47NF 250V
C25	15NF 400V
C26	680NF 100V
C27	47NF 250V
C28	47PF CERAMIC
C29	47PF CERAMIC
C30	100NF 250V
C31	100NF 250V
C32	470NF 100V
C33	33PF CERAMIC

NO.	DIODES
D 1	15V ZENER DIODE
D 2	15V ZENER DIODE
D 1	1N4148
D 4	1N4148
D 5	1N4148
D 6	1N4148
D 7	1N4005
D 8	1N4005
D 9	16V ZENER DIODE
D10	16V ZENER DIODE
D11	1N4005

NO.	INTEGRATED CIRCUITS
IC1	NE5534N OP AMP.
IC2	TL071CP OP AMP.
IC3	4N26 OPTO COUPLER.

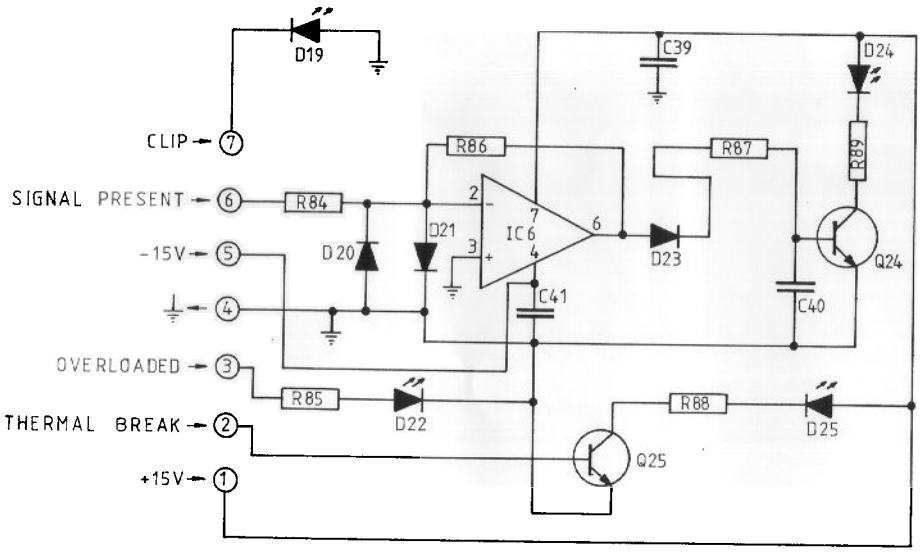
NO.	INDUCTOR
1	0,5UH INDUCTOR

NO.	TRANSISTORS		
Q 1A	MPSA 43 NPN	Q 1	MJE 350 PNP
Q 2A	MPSA 93 PNP	Q 2	MJE 340 NPN
Q 3	BD 235 NPNBIAS		
Q 4	MPSA 43 NPN		
Q 5	MPSA 93 PNP		
Q 6	MJE 340 NPN		
Q 7	MJE 350 PNP		
Q 8	25A 1494 PNP		
Q 9	25C 3858 NPN		
Q10	25C 3858 NPN		
Q11	25C 3858 NPN		
Q12	25C 3858 NPN		
Q13	25C 3858 NPN		
Q14	25C 3858 NPN		
Q15	25A 1494 PNP		
Q16	25A 1494 PNP		
Q17	25A 1494 PNP		
Q18	25A 1494 PNP		
Q19	25A 1494 PNP		
Q20	MPSA 93 PNP		
Q21	MPSA 43NPN		
Q22	MPSA 43NPN		

NO.	RESISTORS
R 1	15KO- 1%
R 2	15KO- 1%
R 3	14KO- 1%
R 4	14KO- 1%
R 5	22KI- 1%
R 6	200E - 1%
R 7	1KO - 1%
R 8	JEO - 1%
R 9	6K2 - 1%
R10	511E- 1%
R11	2K1 - 1%
R12	3K9 - 2W
R12A	5K POTMETER
R13	100E- 1%
R14	15KO-1%
R15	15KO-1%
R16	100E -1%
R17	3KG -2W
R18	681E -1%
R19	365E -1%
R20	68IE -1%
R21	150E -1%
R22	100E POTMETER
R23	681E -1%
R25	25K POTMETER
R26	100E -1%
R26A	100E
R27	100E -1%
R28	100E -1%
R29	100E -1%
R30	100E -1%

NO.	RESISTORS
R31	.00E
R31A	.00E
R32	.00E
R32A	?2E
R33	.00E
R33A	?2E
R34	?2E ?W
R34A	',7E
R35	?2E 2W
R35A	',7E
R36	.0E
R37	.0E
R38	),33E 5W
R38A	',7E
R39	),33E 5W
R39A	',7E
R40	.0E
R41	.0E
R42	),33e 5W
R42A	',7E
R43	),33E 5W
R43A	',7E
R44	.0E
R45	.0E
R46	),33E 5W
R46A	',7E
R47	),33E 5W
R47A	',7E
R48	.0E
R49	.0E
R50	),33E 5W
R50A	',7E
R51	),33E 5W
R51A	',7E
R52	.0E
R53	.0E
R54	),33e 5W
R55	),33E 5W
R56	?K5 ?OTMETER
R57	'7K
R58	.00K
R59	.E 2W
R60	33E 5W
R62	.KO -1%
R63	.9KI -1%
R64	00K -1%
R65	.00K -1%
R66	.0KO -1%
R67	'7K5 -1%
R68	'K75 -1%
R69	.00K -1%
R70	3 kg-?W
R71	?K15 '%

NO.	SWITCHES
S 1	THERMAL SWITCH 35°C.



SA900 B/500B/C LED BOARD		note:
designer: H.Schouten	A4	number: 3
drawn: P.S.van Alpen		date: 14-04-84

CAPACITORS

C39 - 100 nF 100 V. MkT
C40 - 100 nF 100 V. MkT
C41 - 100 nF 100 V. MkT

DIODES

D 19 - Led 5x5 mm. RED
D 20 - 1N 4148
D 21 - 1N 4148
D 22 - Led 5x5 mm. RED
D 23 - 1N 4148
D 24 - Led 5x5 mm. GREEN
D 25 - Led 5x5 mm. RED

INTEGRATED CIRCUITS

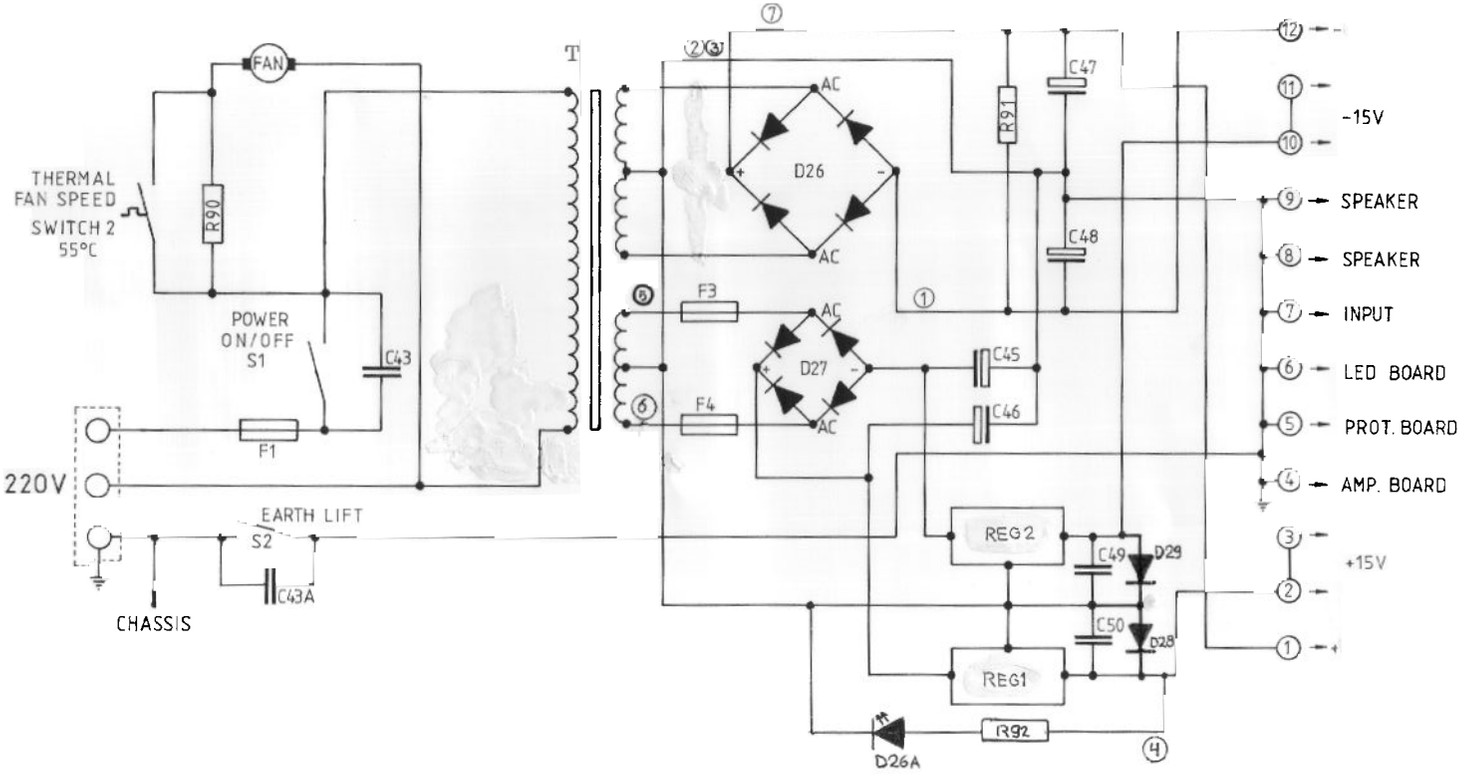
IC6 - TL 081

RESISTORS

R 84 -	10 KO	1%
R 85 -	470E	1%
R 86 -	47K5	1%
R 87 -	10 KO	1%
R 88 -	470E	1%
R 89 -	470E	1%

TRANSISTORS

Q 24 - BC 517
Q 25 - BC 182/BC 547



SA500/900 POWER SUPPLY BOARD		note
designer: H.Schouten	A4	numbe. 4
drawn: P.S van Alpen		date: 14-04-8

NO.	CAPACITORS
C43	01UF 630V
C43A	100NF 250V
C45	220UF 25V ELECTROLYTIC
C46	220UF 25V ELECTROLYTIC
C47	10000UF 100V ELECTROLYTIC
C48	10000UF 100V ELECTROLYTIC
C49	100NF 100V MKT
C50	100NF 100V MKT

NO.	DIODES
D26	DIODE RECTIFIER KBPC 25-06
D27	DIODE RECTIFIER B80 C1500
D26A	LED 3 MM. RED
D28	IN4005
D29	IN4005

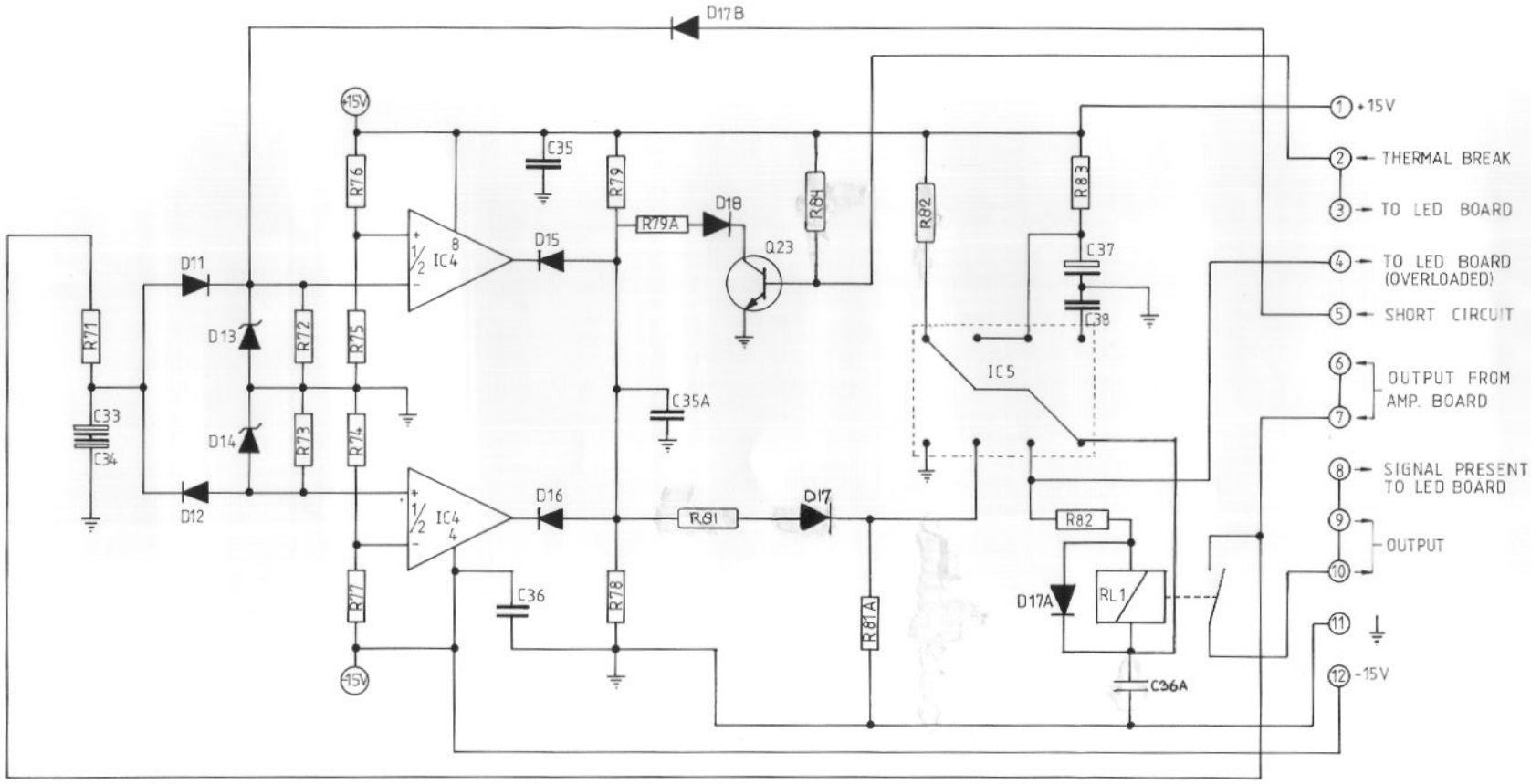
NO.	INTEGRATED CIRCUITS
REG 1	7815
REG 2	7915

NO.	FUSES
F1	FUSE 6,3A SLOW BLOW 5x20 MM.
F2	FUSE 1 A SLOW BLOW 5x20 MM.
F3	FUSE 1 A SLOW BLOW 5x20 MM.

NO.	RESISTORS
R90	IK5 9W 5%
R91	8K2 9W 5% / 4K7 5W (SA500)
R92	681E 1%

NO.	SWITCHES
S1	= POWER SWITCH C&K
S2	= GROUND LIFT SWITCH C&K 7101
S3	= THERMAL SWITCH 55°C.

NO.	TRANSFORMER
T1	= TOROIDAL TRANSFORMER 500 VA T.B.S.



SAS 102 PROTECTION BOARD	note:	
	A4	number: 2
designer: H.Schouten		
drawn: P.S.van Alphen	date: 13-04-84	

NO.	CAPACITORS
C33	10UF 35V ELECTROLYTIC
C34	10UF 35V ELECTROLYTIC
C35	100NF 100V
C35A	100NF 100V
C36	100NF 100V
C36A	100NF 100V
C37	47UF 25V ELECTROLYTIC
C38	100NF 100V MKT

NO.	DIODES
D11	1N4005
D12	1N4005
D13	10V ZENER DIODE
D14	10V ZENER DIODE
D15	1N4005
D16	1N4005
D17	1N4005
D17A	1N4005
D17B	1N4005
D18	1N4005

NO.	INTEGRATED CIRCUITS
Ic4	TL 072
Ic5	NE 555

NO.	TRANSISTORS
Q23	BC 547 B

NO.	RESISTORS
R71	182K 1%
R72	100K 1%
R73	100K 1%
R74	22KI 1%
R75	22KI 1%
R76	100K 1%
R77	100K 1%
R78	100K 1%
R79	47K5 1%
R79A	22KI 1%
R81	47K5 1%
R81A	100K 1%
R82	100E 1%
R83	62KO 1%
R84	4K75 1%

NO.	RELAYS
RL1	RAPA 011.51-22-001

NO.	CAPACITORS
C33	10UF 35V ELECTROLYTIC
C34	10UF 35V ELECTROLYTIC
C35	100NF 100V
C35A	100NF 100V
C36	100NF 100V
C36A	100NF 100V
C37	47UF 25V ELECTROLYTIC
C38	100NF 100V MKT

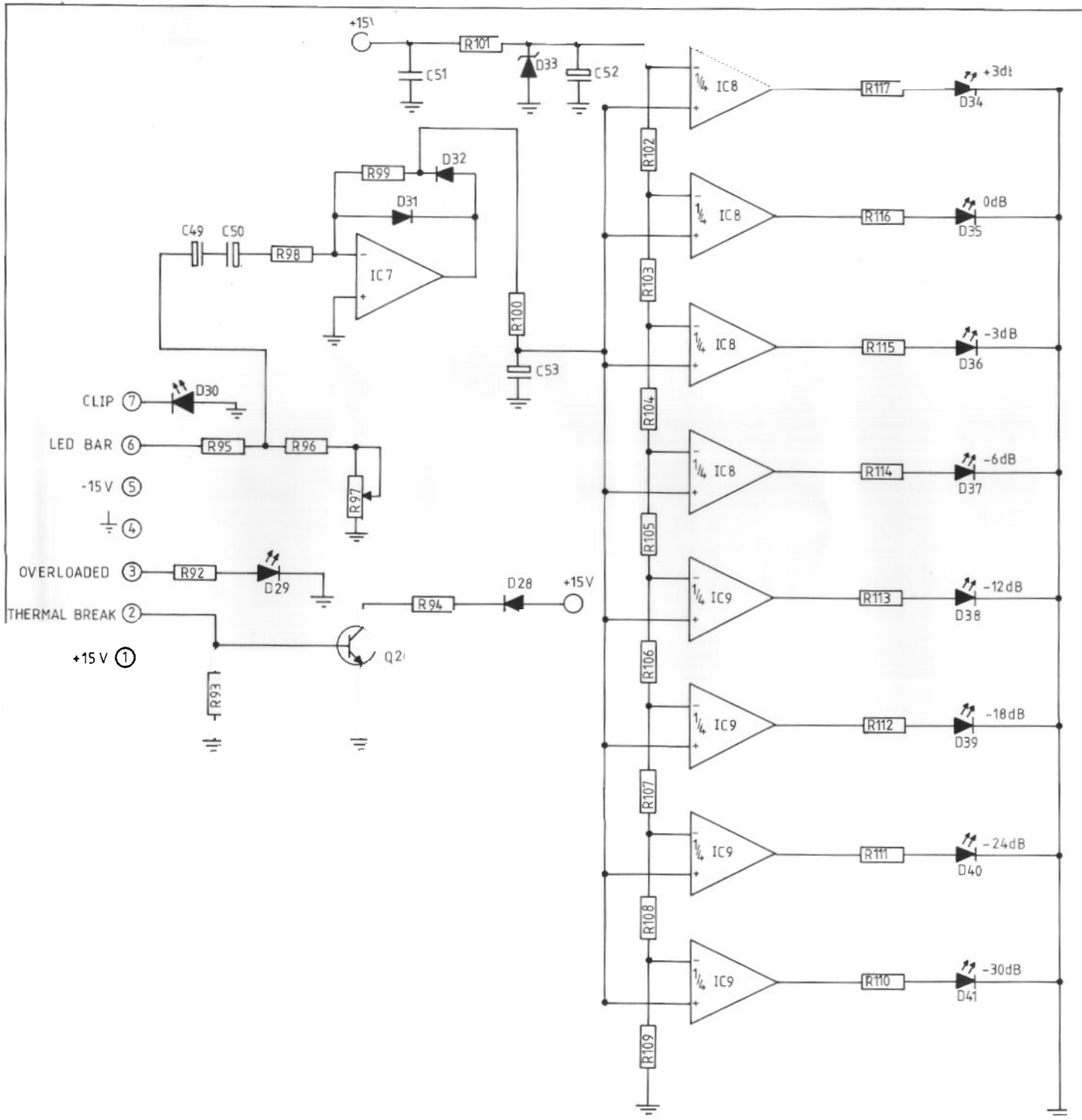
NO.	DIODES
D11	1N4005
D12	1N4005
D13	10V ZENER DIODE
D14	10V ZENER DIODE
D15	1N4005
D16	1N4005
D17	1N4005
D17A	1N4005
D17B	1N4005
D18	1N4005

NO.	INTEGRATED CIRCUITS
Ic4	TL 072
Ic5	NE 555

NO.	TRANSISTORS
Q23	BC 547 B

NO.	RESISTORS
R71	182K 1%
R72	100K 1%
R73	100K 1%
R74	22KI 1%
R75	22KI 1%
R76	100K 1%
R77	100K 1%
R78	100K 1%
R79	47K5 1%
R79A	22KI 1%
R81	47K5 1%
R81A	100K 1%
R82	100E 1%
R83	62KO 1%
R84	4K75 1%

NO.	RELAYS
RL1	RAPA 011.51-22-001



BOSE 1802 PEAK LEVEL INDICATOR	note numbe A4
designer: H. Schouten	
drawn: J. Buchener	date: 12-04-8

NO.	CAPACITORS
C49	10UF 35V ELECTROLYTIC
C50	10UF 35V ELEKTROLYTIC
C51	100NF 100V ELECTROLYTIC
C52	10UF 35V ELECTROLYTIC
C53	1UF 35V TANTALUM

NO.	DIODES
D28	LED 5MM. RED
D29	LED 5MM. RED
D30	2 LEDS 5MM. RED
D31	1N 4148
D32	1N 4148
D33	5V1 ZENER DIODE
D34	LED 5MM. RED
D35	LED 5MM. RED
D36	LED 5MM. RED
D37	LED 5MM. RED
D38	LED 5MM. RED
D39	LED 5MM. RED
D40	LED 5MM. RED
D41	LED 5MM. RED

NO.	INTEGRATED CIRCUITS
IC7	TL 071 OP AMP
IC8	TL 084 QUAD OP AMP
IC9	TL 084 QUAD OP AMP

NO.	TRANSISTORS
Q26	BC 547 B

NO.	RESISTORS
R 92	470 OHMS 1%
R 93	100K 1%
R 94	470 OHMS 1%
R 95	100K 1%
R 96	1K 1%
R 97	1K POTMETER
R 98	10K 1%
R 99	100K 1%
R100	1K 1%
R101	4K7 1%
R102	2K94 1%
R103	2K15 1%
R104	1K78 1%
R105	1K4 1%
R106	909 OHMS 1%
R107	422 OHMS 1%
R108	232 OHMS 1%
R109	221 OHMS 1%
R110	470 OHMS 1%
R111	470 OHMS 1%
R112	470 OHMS 1%
R113	470 OHMS 1%
R114	470 OHMS 1%
R115	470 OHMS 1%
R116	470 OHMS 1%
R117	470 OHMS 1%