

## SUMMING AMPLIFIER 373-110

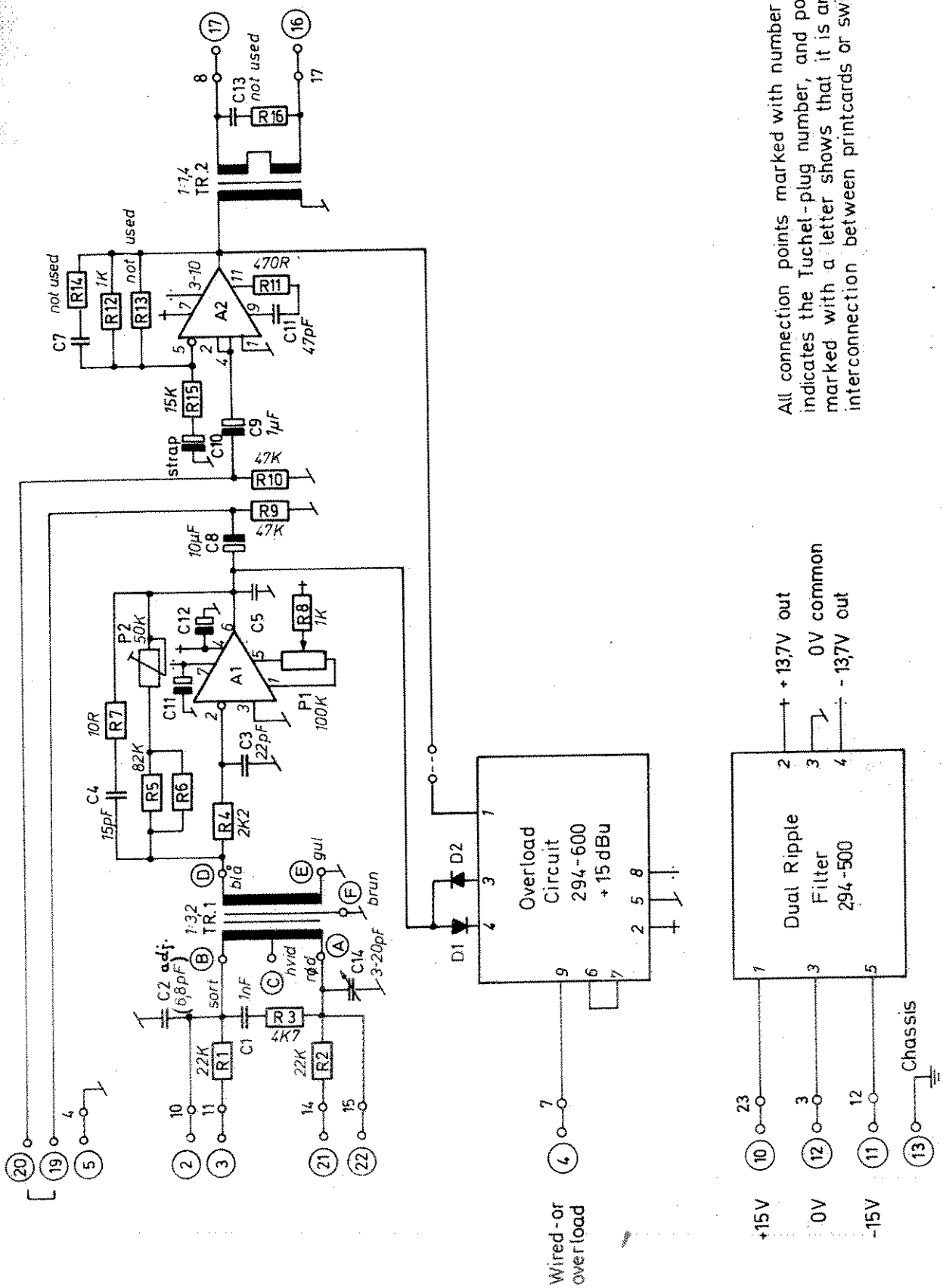
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Supply Voltage	:	+ 15V	+10%
Max. ripple on supply voltage	:	0,1V	p.p.
Current consumption, no Signal	:	Approx. 20 mA	200 ohms load
" " , +21dBu out	:	Approx. 100mA	" " "
Ambient temperature range	:	-10°C	to +45°C
Gain (voltage input, term Hand 14)	:	0dB	± 0,5dB
Gain adjustment (through fronthole)	:	Approx. +2dB	
Frequency Respons 0,5dB points	:	20Hz	- 22kHz
" " 3 dB points	:	5Hz	- 50kHz
Input impedance, summing input *	:	Approx. 100 ohms	floating
Input impedance, voltage input	:	Approx. 44Kohms	floating
Input overload level	:	+21dBu	(8,6V)
Input overload Circuit	:	triggers on at +18dBu	+0,5dB
Noise, terminal 3 and 21 shorted	:	-96dBu	curve A
Cross talk between 2 summing inputs Z Gen 600 ohms	:	better than 80dB	
Distortion, entire freq. range +18 dBu input	:	less than 0,1%	
Output Impedance	:	less than 40 ohms floating	
Minimum load Impedance	:	200 ohms	
Connector	:	Tuchel T2700	
Mechanical Outline	:	Bl-cassette, front 40x95 mm depth 103 mm	
Common mode rejection	:	50dB	

Terminal No.:

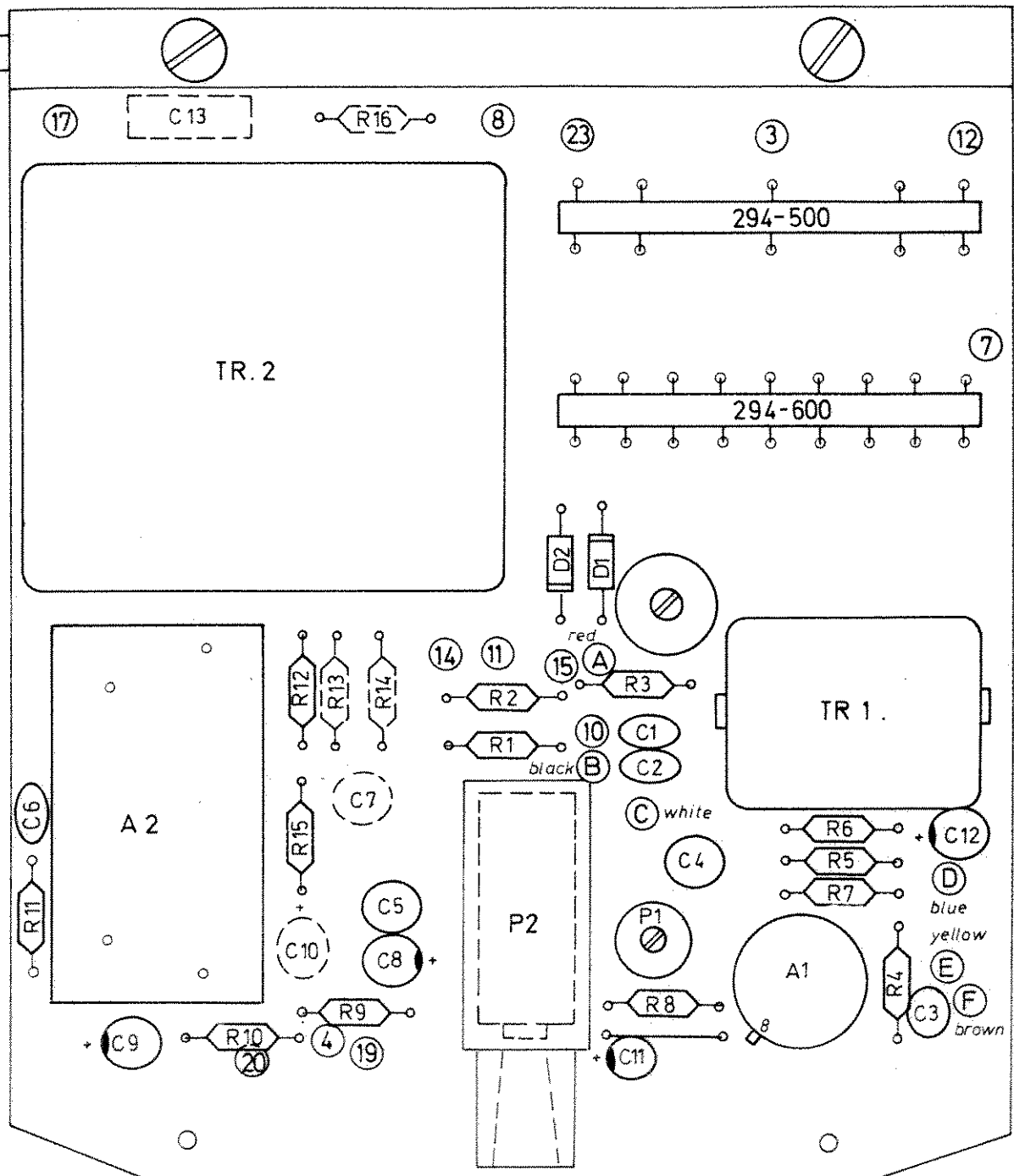
2	Summing Input (bal.)	0°	*
22	" " "	180°	
3	Line " "	0°	
21	" " "	180°	
4	Wired or overload		
19	Pre amp. Output (unsym.) (to Potentiometer)		
20	Output amp. Input (unsym.) (from Potentiometer)		
5	Ground for Potentiometer		
17	Line Output (bal.)	0°	
16	" " "	180°	
10	+Vb	+15V	
11	-Vb	-15V	
12	0V, common		
13	Chassis		

\* Note: External summing resistors 2x22Kohm must be connected.




All connection points marked with number indicates the Tuchel-plug number, and points marked with a letter shows that it is an interconnection between printcards or switches.

Pos:	Antal:	Materiale:	Behandi..	Del af
Målestok:	<p style="text-align: center;">Summing Amplifier 373-110</p> <p style="text-align: center;">Diagram</p>			
Tolerance: mm				
Tegnet : 28.1.75 IW				
Godkendt:				
Revideret: !)	<p style="text-align: center;"><b>NTP</b></p> <p style="text-align: center;">N. TONNES PEDERSEN A/S</p>			373-1130- A - 4



NB! Placeres i højre side af kassetten.

Pos.:	Antal:	Materiale:	Behandl.:	Del af:
Målestok :	2:1	Summing Amplifier 373-110	Component Lay-out	 N. TONNES PEDERSEN A/S
Tolerance :	± mm			
Tegnet :	22.1.75 IW			
Godkendt :				
Revideret :				
				373-1141-A-4

OS DESIGN. REF.	ANT. QTY	BETEGNELSE / DESCRIPTION				LEV. FABRIKAT	SUPPL. MANUFACT.
R1		Resistor	22K	1/8W	5%	Resista	SK2
2		"	22K	"	"	"	"
3		"	4K7	"	"	"	"
4		"	2K2	"	"	"	"
5		"	82K	"	"	"	"
6		"	not used				
7		"	10R	"	"	"	"
8		"	1K	"	"	"	"
9		"	47K	"	"	"	"
10		"	47K	"	"	"	"
11		"	470R	"	"	"	"
12		"	1K	"	"	"	"
13		"	not used				
14		"	not used				
15		"	15K	"	"	"	"
16		"	adjusted	"	"	"	"
C1		Ceramic cap.	1nF/40V	2222-629-		Miniwatt	
2		"	adjusted	(15pF)		"	
3		"	22pF/100V	2222-632-		"	
4		"	15pF/100V	2222-632-		"	
5		"	not used				
6		"	47pF/100V	2222-632-		"	
7		"	not used				
8		Tantal cap.	10µF/35V	ETP		ERO	
9		"	1µF/35V	"		"	
10		"	strapped	"		"	
11		"	0,1µF/35V	"		"	
12		"	0,1µF/35V	"		"	
13		"	adjusted				
14		Trim. cap.	2,5-20pF	AT 9308		TECELEC	
P1		Trim. pot.	100K (200K)	3329-H		BOURNS	
P2		"	50K	3009-P		"	
		Panel mount		H 83 P		"	
D1		Diode	1N4148			Miniwatt	
D2		"	1N4148			"	
A1		Op. amp.	HA2605-5			Harris	
A2		"	M-100			NTP	
Tr 1		Input transformer	BV35952			BEYER	
Tr 2		Output	13590			J. S.	
		Printed circuit Board		373-1140		NTP	

**NTP**

NTP ELEKTRONIK A/S

Summing Amplifier

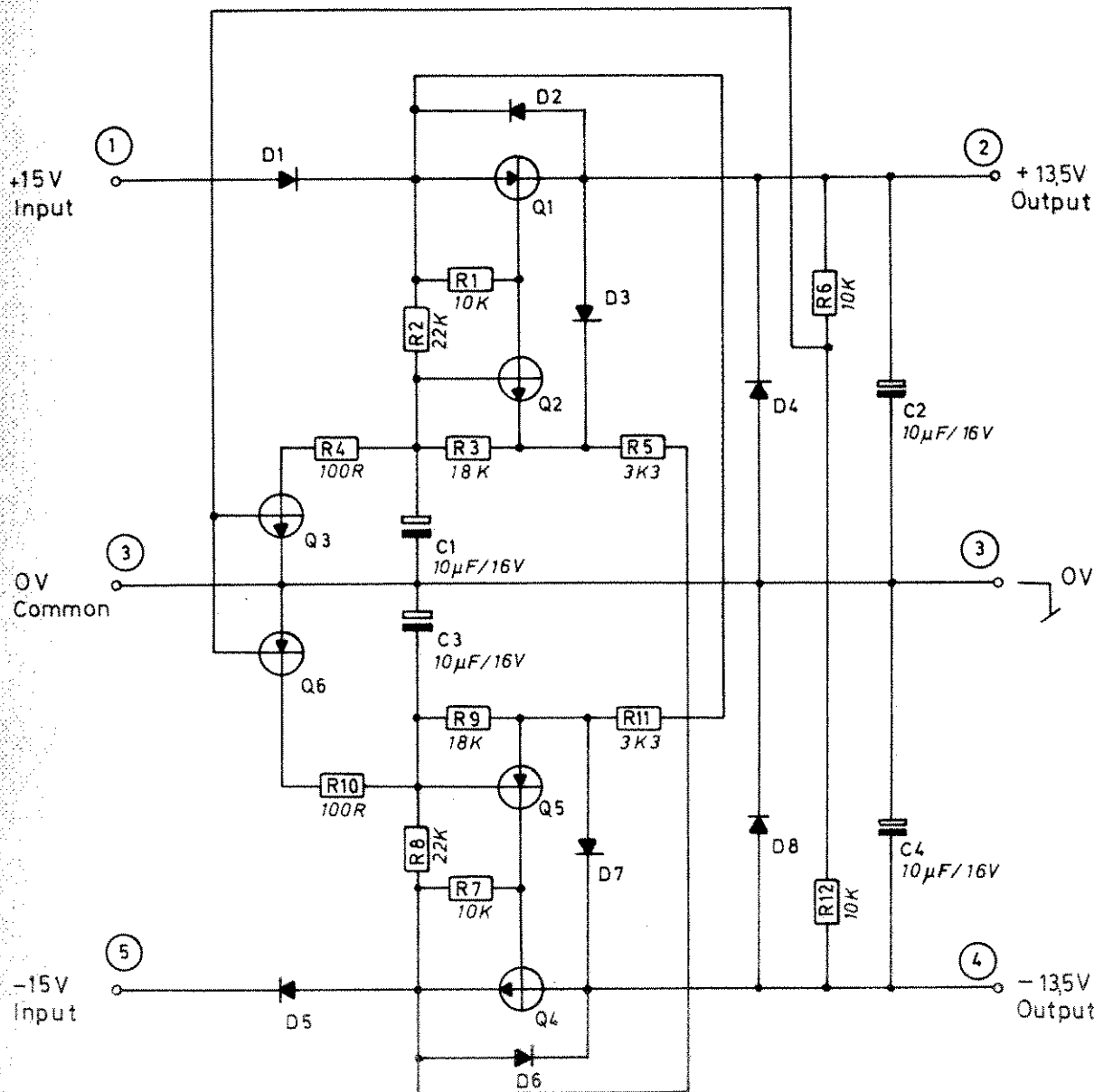
373-110


Partslist

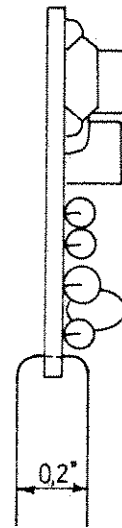
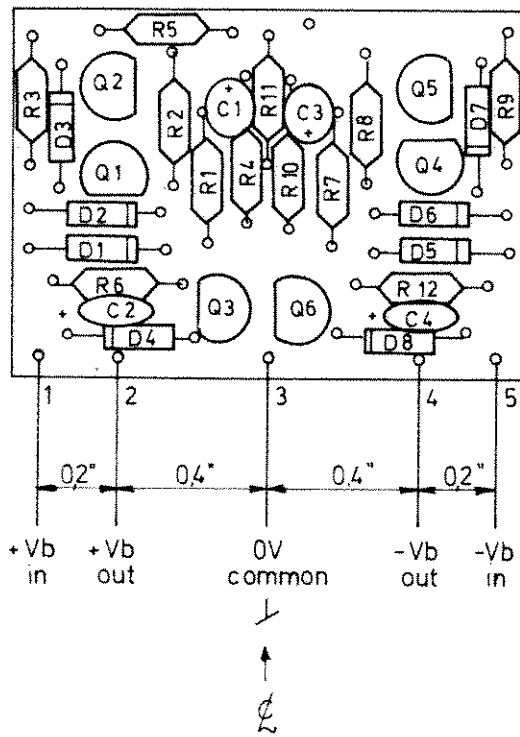
STYKLISTE/PARTS LIST

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No.: 373-1131-A4



Pos.:	Antal:	Materiale:	Behandl.:	Del af:
Målestok:				
Tolerance: ±	mm	DUAL RIPPLE FILTER 294 - 500 (tracking)		 N. TØNNES PEDERSEN A/S
Tegnet:	20-12-74 G.J.	Diagram		
Godkendt:				294 - 5030 - A - 4
Revideret:				

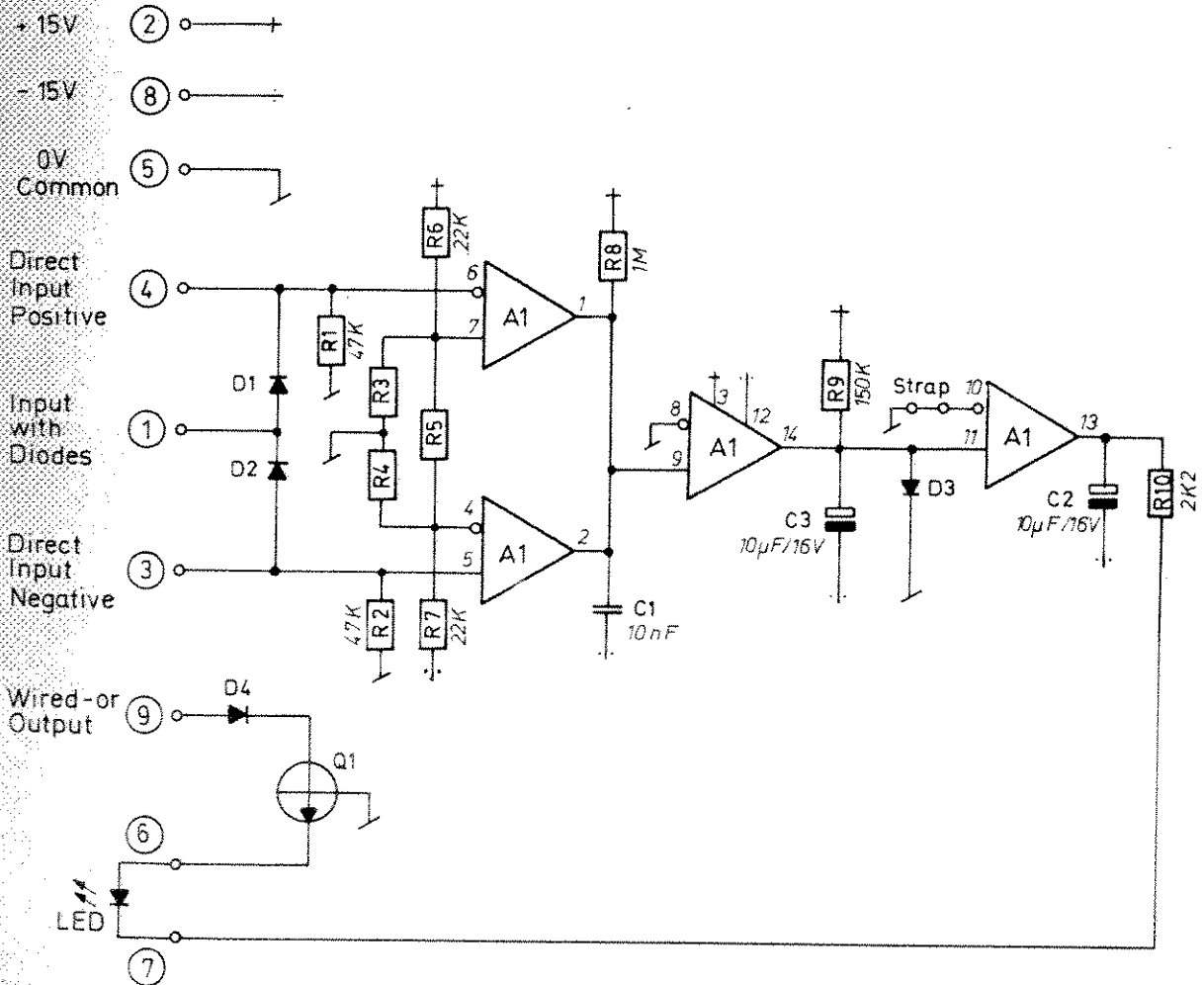


Pos.	Antal:	Materiale:	Behandl.:	Del af:
Målestok:				
Tolerance: ±	mm	Dual Ripple Filter (tracking) 294-500		
Tegner:	22.1.75 IW	Component Lay-out		
Godkendt:				
Revideret:				
				294-5041-A-4

POS DESIGN REF.	ANT. QTY	BETEGNELSE / DESCRIPTION				LEV. FABRIKAT	SUPPL. MANUFACT.
R1		Resistor	10K	1/8W	5%	Resista	SK2
R2		"	22K	"	"	"	"
R3		"	18K	"	"	"	"
R4		"	100R	"	"	"	"
R5		"	3K3	"	"	"	"
R6		"	10K	"	"	"	"
R7		"	10K	"	"	"	"
R8		"	22K	"	"	"	"
R9		"	18K	"	"	"	"
R10		"	100R	"	"	"	"
R11		"	3K3	"	"	"	"
R12		"	10K	"	"	"	"
C1		Tantal cap.	10uF/16V			ERO	
C2		" "	10uF/16V			"	
C3		" "	10uF/16V			"	
C4		" "	10uF/16V			"	
D1		Diode	1N4002			IR	
D2		"	1N4148			Miniwatt	
D3		"	1N4148			"	
D4		"	1N4148			"	
D5		"	1N4002			IR	
D6		"	1N4148			Miniwatt	
D7		"	1N4148			"	
D8		"	1N4148			"	
Q1		Transistor	BC 327-16			Siemens	
Q2		"	BC 237 B			"	
Q3		"	BC 237 B			"	
Q4		"	BC 337-16			"	
Q5		"	BC 307 B			"	
Q6		"	BC 307 B			"	
		Printed Circuit	294-5040			NTP	

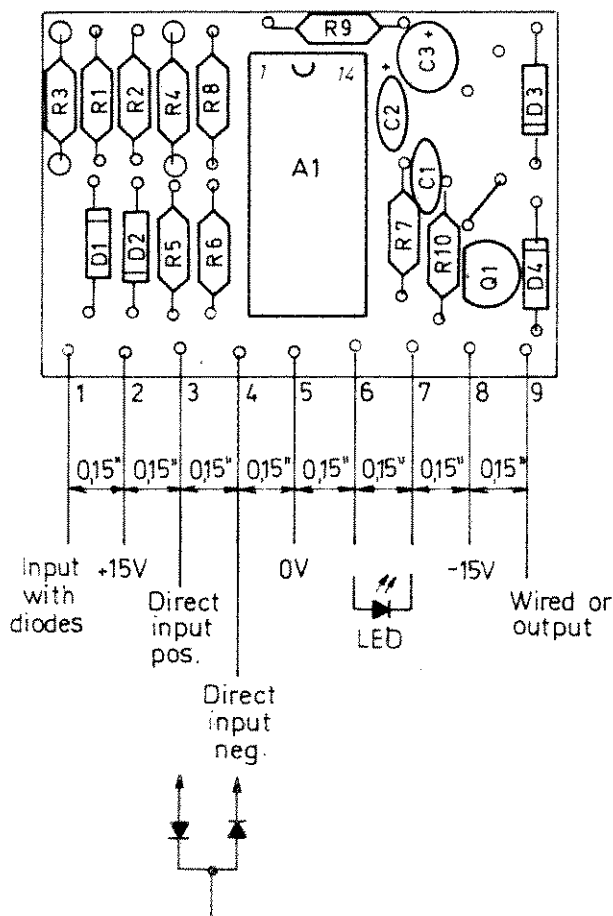


Overload input levels:		+6	+9	+15	+18	dB
+Vb Supply Voltage +24V (+22,5V)	R3	5K6	8K2	22K	68K	
	R4	5K6	8K2	22K	68K	
	R5	27K	47K	820K	820K	
+Vb Supply Voltage +15V~ +30V(+27V)	R3	5K6	12K	22K	47K	
	R4	5K6	12K	22K	47K	
	R5	15K	27K	100K	220K	



For wired-or output only, terminals 6 and 7 must be interconnected.

Pos.:	Antal:	Materiale:	Behandl.:	Del af:
Målestok:	Overload Circuit 294-600			
Tolerance: ± mm	Diagram			
Tegnet: 23.1.75 IW				
Godkendt:				
Revideret:			294-6030-A-4	



(Terminallerne bukses efter lodning.)

Pos.:	Antal:	Materiale:	Behandl.:	Del af:
Målestok: 2:1		Overload Circuit	294-600	
Tolerance: ± mm		Component Lay-out		
Tegnet: 22.1.75 IW				294-6041-A-4
Godkendt:				
Revideret:				

ANT. / QTY	BETEGNELSE / DESCRIPTION	LEV. / SUPPL. FABRIKAT / MANUFACT.
	Resistor 47K 1/8W 5%	Resista SK2
	" 47K " "	"
	" adjusted } see diagram	
	" adjusted }	
	" adjusted }	
	" 22K " "	"
	" 22K " "	"
	" 1M " "	"
	" 150K " "	"
	" 2K2 " "	"
	Ceramic cap. 10nf 629-02103	Miniwatt
	Tantal " 10uF/16V	ERO
	Tantal " 10uF/16V	ERO
	Diode 1N4148	Miniwatt
	" 1N4148	"
	" 1N4148	"
	" 1N4148	"
	Transistor BC 237 B	Siemens
	Quad Comparator LM 339 N	National Semi.
	Printed Circuit 294-6040	NTP