

## FILTER UNIT 182-120

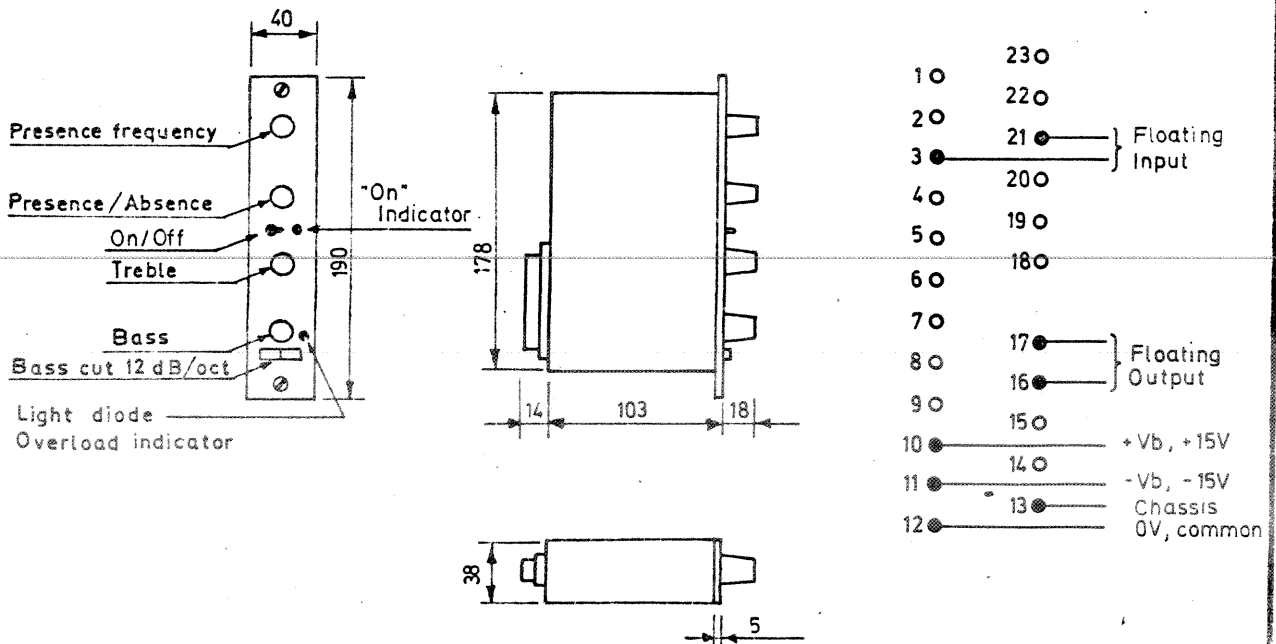
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Diagram Switch Unit 182-A4	182-A830-A-4
Component Lay-out Switch Unit 182-A4	182-A841-A-4
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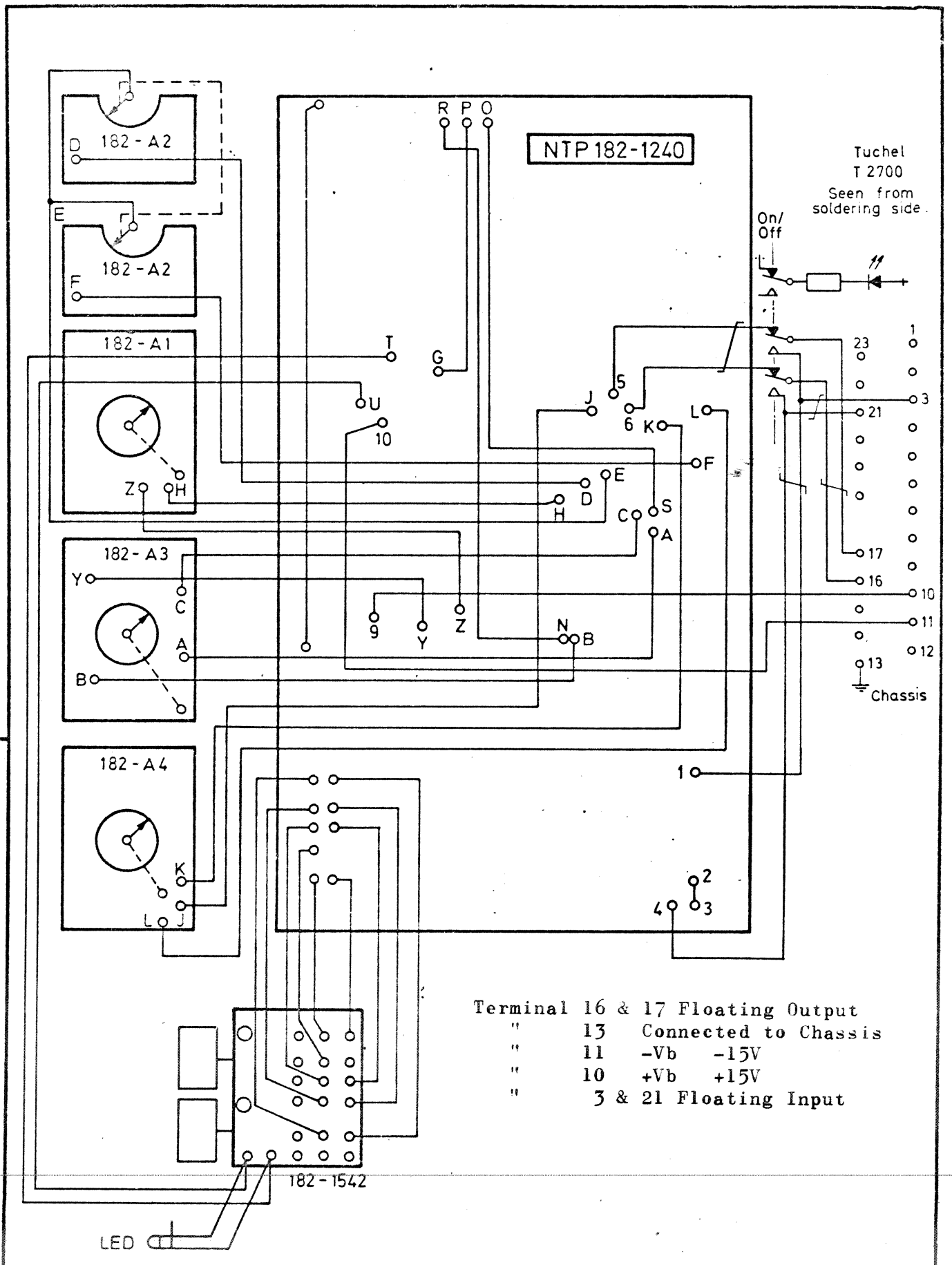
FILTER UNIT 182-120  
 Technical Specifications

182-1211-A-1  
 Page 1 of 1


Supply Voltage	: +15V dc $\pm$ 10%
Maximum Ripple Voltage	: 0.1 V pp
Current Consumption (no signal)	: approx. 65mA
Current Consumption ( $U_{out}=+21dBu$ )	: approx. 155mA
Temperature Range	: -20 to +60°C (-4 to + 140°F)
Presence/Absence Frequencies	: 0,7-1,0-1,4-2,0-2,8-4,0-5,6 kHz
Boost/Cut	: $\pm$ 10 dB in 2 dB steps
High Frequency Filter	: $\pm$ 12 dB in 3 dB steps at 10 kHz
Low Frequency Filter	: $\pm$ 12 dB in 3 dB steps at 60 Hz
Bas Cut 12 dB/oct.	: -3 dB point at : 240 Hz, 120 Hz or 60 Hz
Input Overload Level	: +21 dBu (note 1)
Input Impedance (20 Hz-20 kHz)	: 22 Kohms $\pm$ 15% Balanced Floating
Output Overload Level	: +21 dBu (RL=600 ohms)(note 1)
Output Impedance	: 40 ohms Balanced Floating
Minimum Load Impedance	: 200 ohms
Gain (flat response)	: 0 dB $\pm$ 0.5 dB
Distortion 40 Hz to 200 Hz	: less than 0.5%
Distortion 200 Hz to 20 kHz	: less than 0.2%
Noise referred to Input	: -102 dBu A-curve
Connector	: Tuchel T 2700
Mechanical Outlines	: N-Cassette Al module, front 40x190 mm

Note 1: The overload indicator is activated at input or output levels of approx. +20dBu. See below.

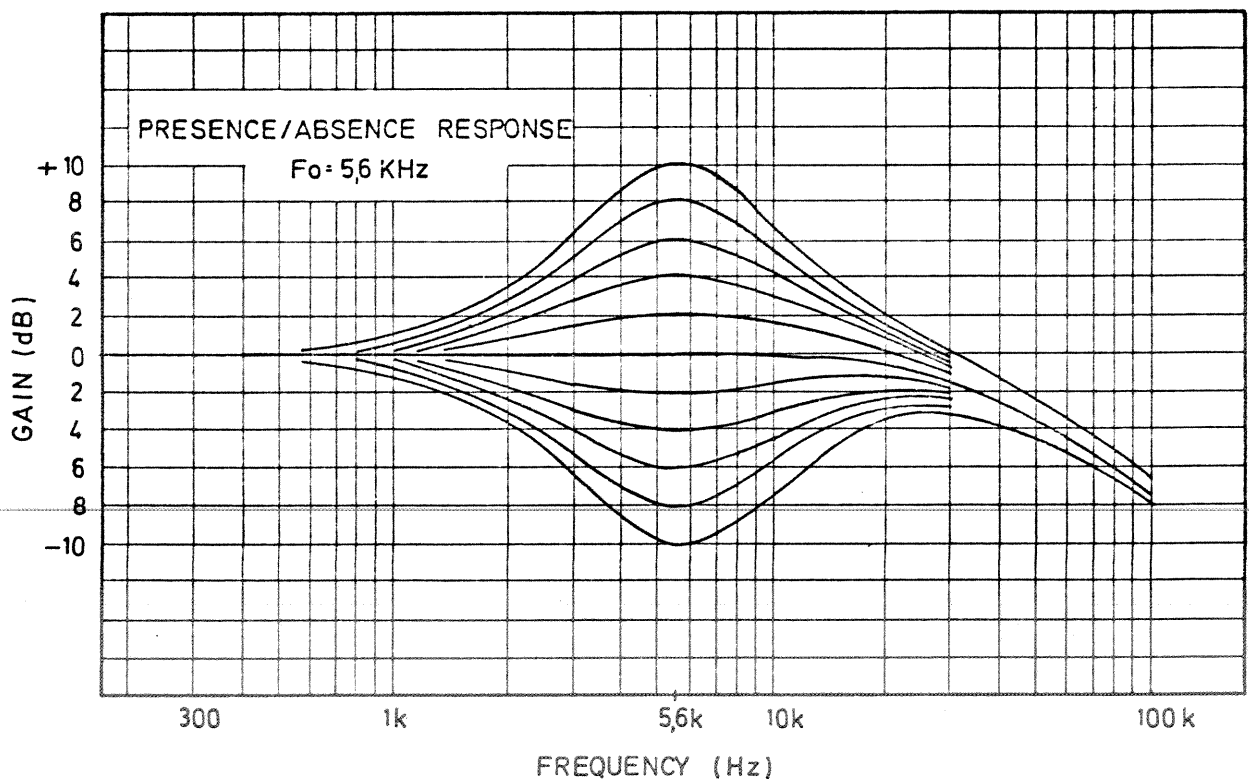
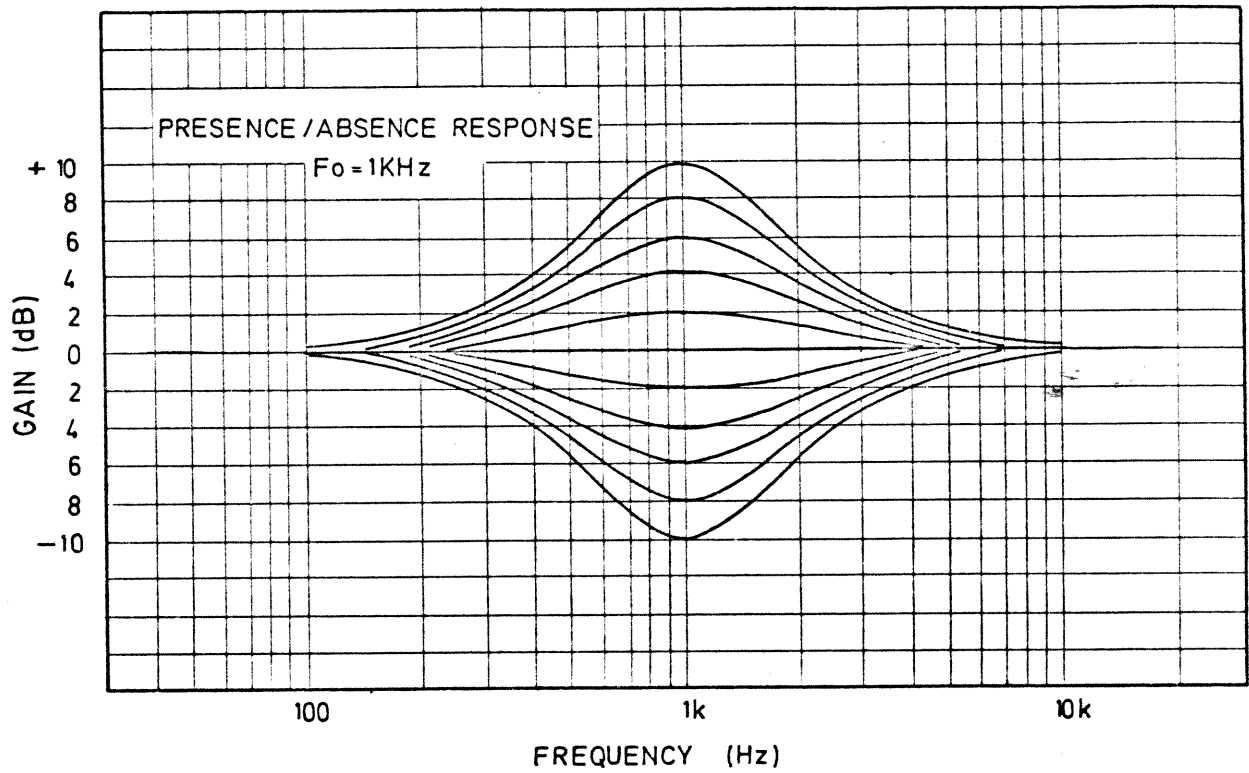


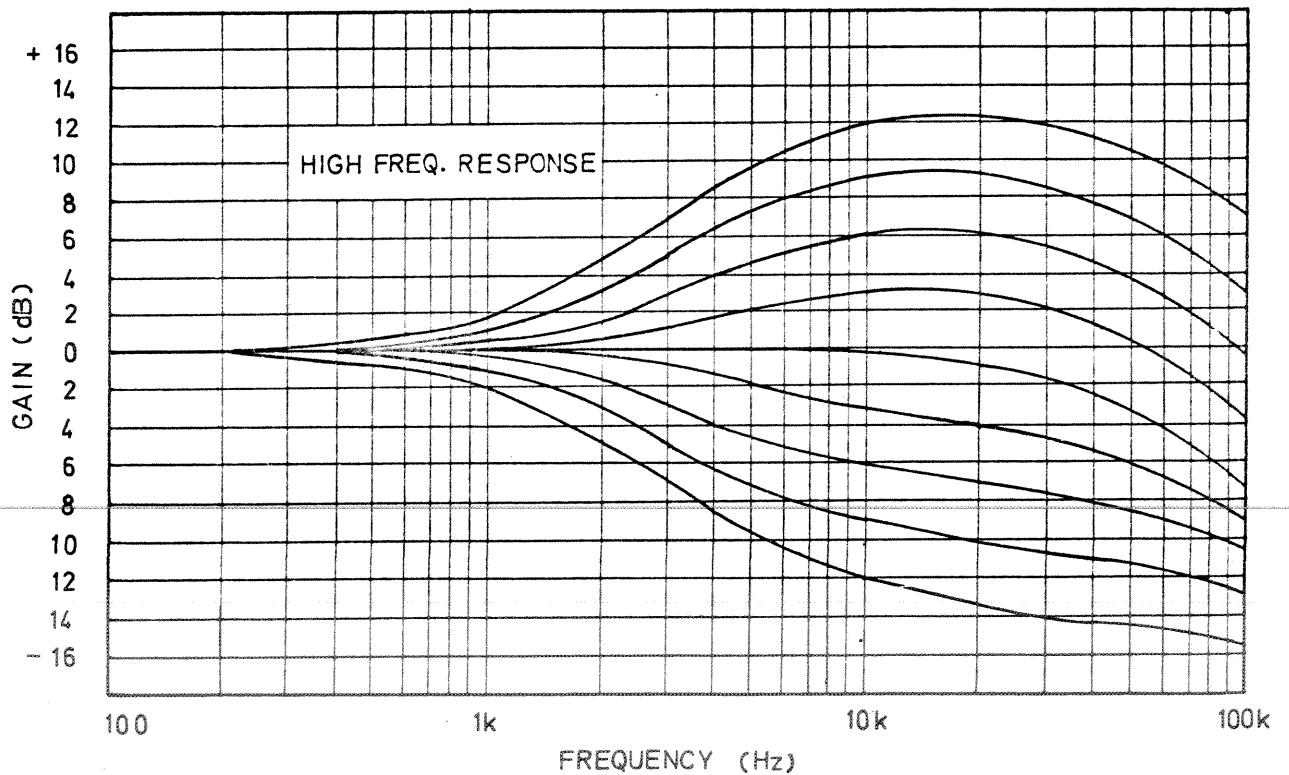
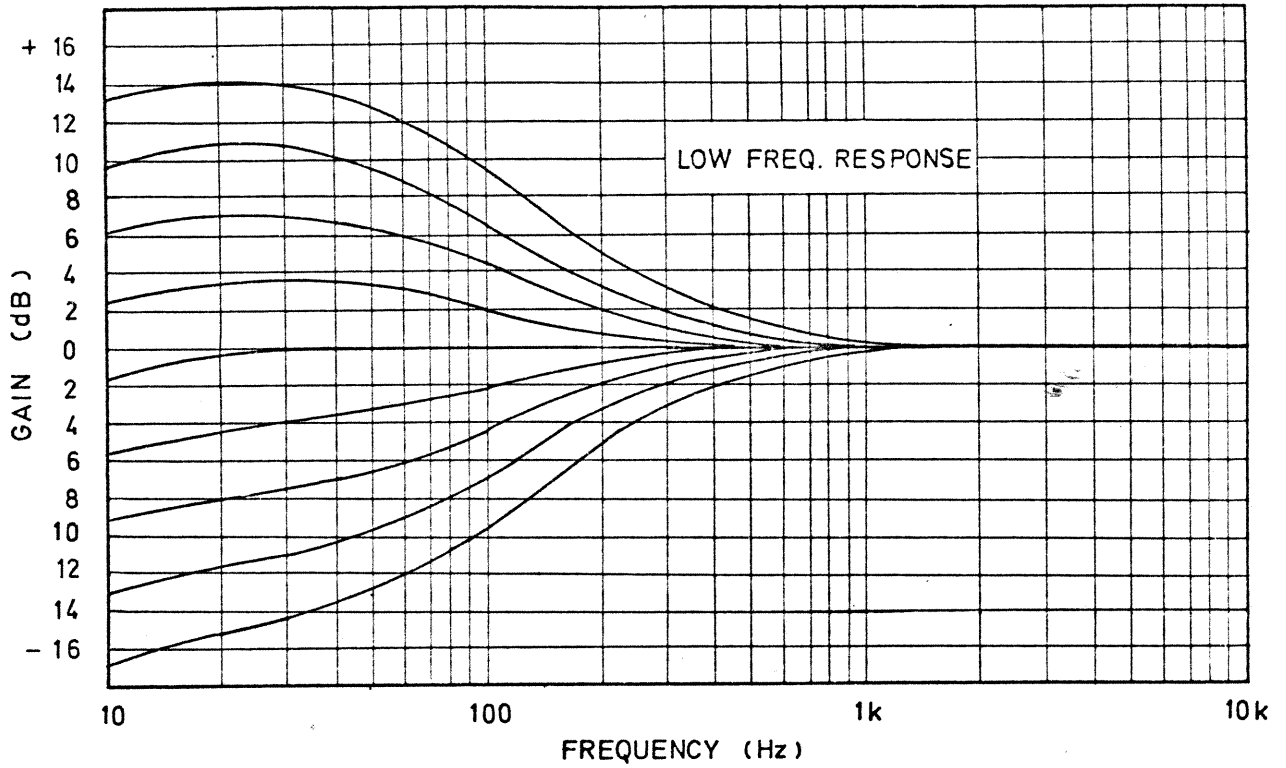
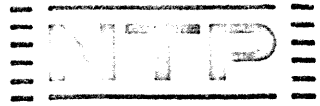


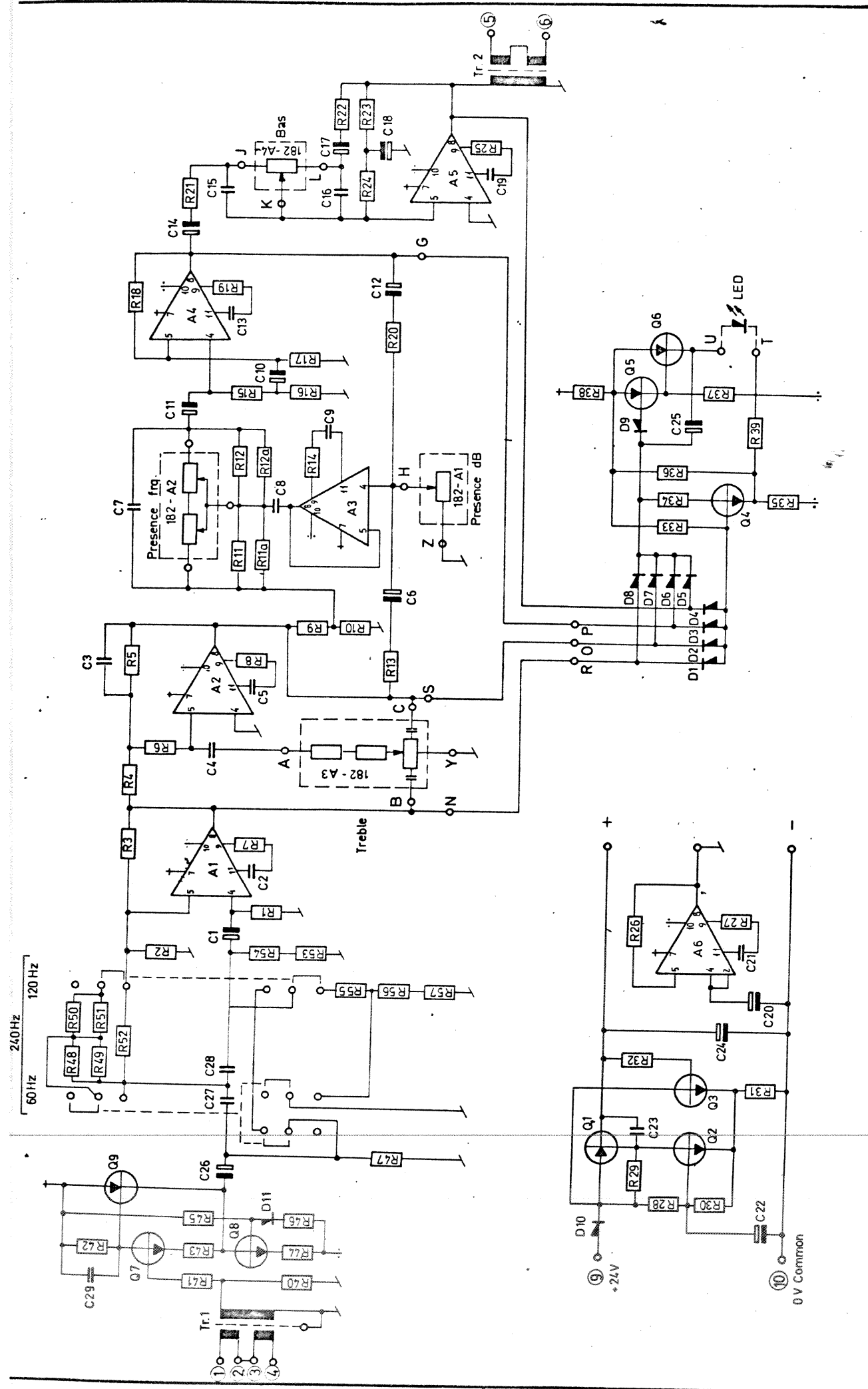
Terminal 16 & 17 Floating Output  
 " 13 Connected to Chassis  
 " 11 -Vb -15V  
 " 10 +Vb +15V  
 " 3 & 21 Floating Input


Pos.:	Antal:	Materiale	Behandl.:	Del af
Målestok :	Filter Unit 182-120			 N. TONNES PEDERSEN A/S
Tolerance: + mm	Terminals and Interconnections			
Tegnet : 13.2.75 IW				182-1203-A-4
Godkendt:				
Revideret :				

Rettelser

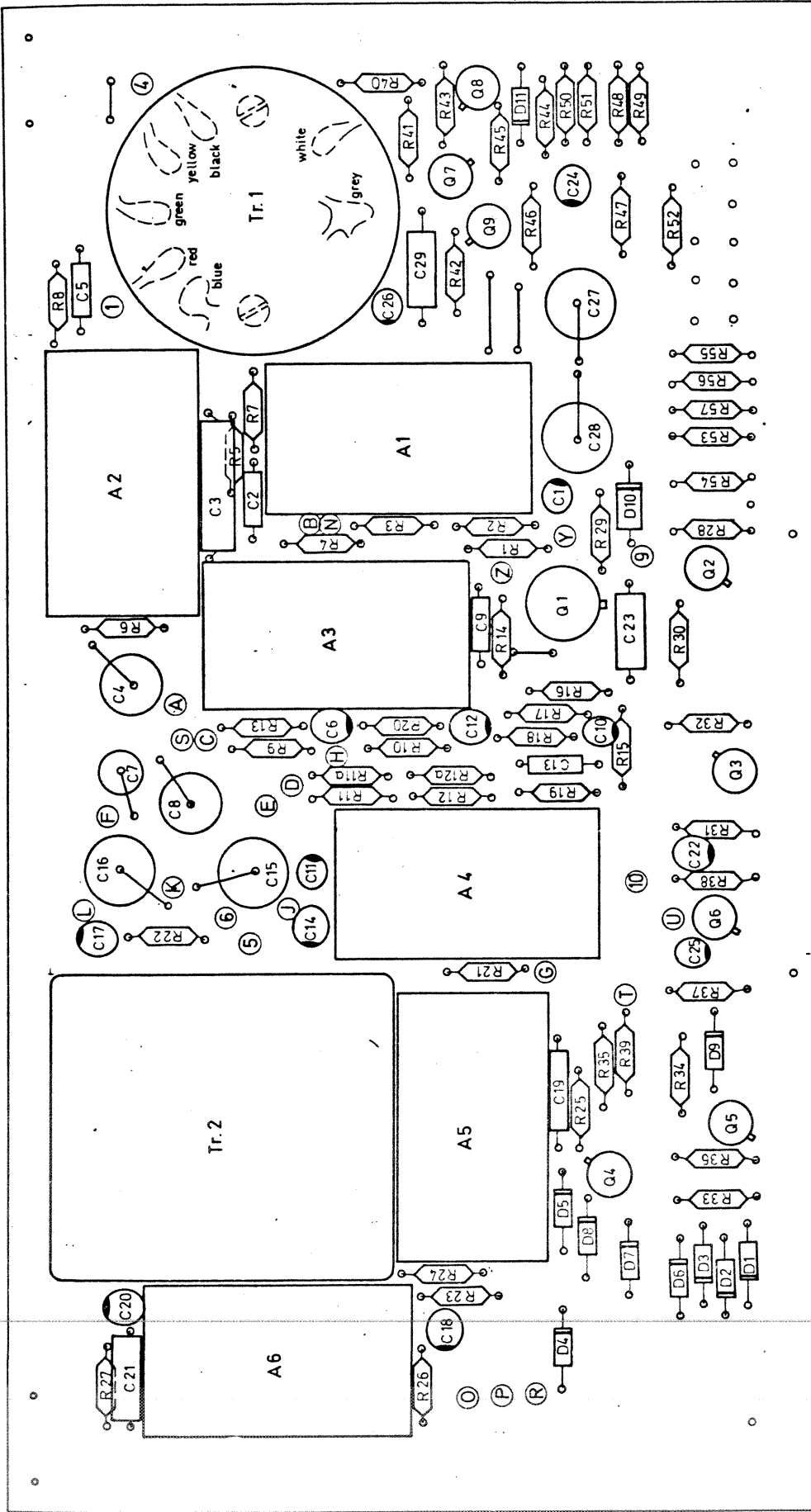







Pos	Antal	Materiale	Behandl	Del at
Målestok				 N. TONNES PEDERSEN A/S 182-1230-A-3
Tolerance	mm			
Tegnet	13.1.75 IW			
Godkendt				
Revideret				

Filter Unit 182-120  
Diagram



Pos	Antal	Materiale	Behandling	Del af
Målestok :				 N. TONNES PEDERSEN A/S 182-1241-A-3
Tolerance :	+	mm		
Tegnet :	13.2.75	IW		
Godkendt:				
Revideret:				
Filter Unit 182-120				
Component Lay-out				

POS.	TEGN. NR.	BETEGNELSE				MATERIALE	ANT.
R1		Resistor	47k $\Omega$	5%	1/8W	Resista SK 2.	
R2		"	10k $\Omega$	"	"	" "	
R3		"	1k $\Omega$	"	"	" "	
R4		"	1.8k $\Omega$	"	"	" "	
R5		"	1.8k $\Omega$	"	"	" "	
R6		"	100 $\Omega$	"	"	" "	
R7		"	560 $\Omega$	"	"	" "	
R8		"	560 $\Omega$	"	"	" "	
R9		"	100 $\Omega$	"	"	" "	
R10		"	100 $\Omega$	"	"	" "	
R11		"	12k $\Omega$	"	"	" "	
R11a		"	82k $\Omega$	"	"	" "	
R12		"	12k $\Omega$	"	"	" "	
R12a		"	82k $\Omega$	"	"	" "	
R13		"	1k $\Omega$	"	"	" "	
R14		"	560 $\Omega$	"	"	" "	
R15		"	22k $\Omega$	"	"	" "	
R16		"	22k $\Omega$	"	"	" "	
R17		"	220 $\Omega$	"	"	" "	
R18		"	220 $\Omega$	"	"	" "	
R19		"	560 $\Omega$	"	"	" "	
R20		"	1k $\Omega$	"	"	" "	
R21		"	180 $\Omega$	"	"	" "	
R22		"	180 $\Omega$	"	"	" "	
R23		"	4.7k $\Omega$	"	"	" "	
R24		"	4.7k $\Omega$	"	"	" "	
R25		"	220 $\Omega$	"	"	" "	
R26		"	1k $\Omega$	"	"	" "	
R27		"	100 $\Omega$	"	"	" "	
R28		"	22k $\Omega$	"	"	" "	
R29		"	10k $\Omega$	"	"	" "	
R30		"	18k $\Omega$	"	"	" "	
R31		"	6.8k $\Omega$	"	"	" "	
R32		"	1k $\Omega$	"	"	" "	
R33		"	10k $\Omega$	"	"	" "	
R34		"	10k $\Omega$	"	"	" "	
R35		"	560 $\Omega$	"	"	" "	
R36		"	5.6k $\Omega$	"	"	" "	
R37		"	10k $\Omega$	"	"	" "	
R38		"	470 $\Omega$	"	"	" "	
R39		"	1.5k $\Omega$	"	"	" "	
R40		"	10k $\Omega$	"	"	" "	
R41		"	220 $\Omega$	"	"	" "	
R42		"	2.2k $\Omega$	"	"	" "	
R43		"	1.5k $\Omega$	"	"	" "	
R44		"	68 $\Omega$	"	"	" "	
R45		"	10k $\Omega$	"	"	" "	
R46		"	270 $\Omega$	"	"	" "	
R47		"	47k $\Omega$	"	"	" "	
R48		"	22k $\Omega$	"	"	" "	
R49		"	22k $\Omega$	"	"	" "	
R50		"	12k $\Omega$	"	"	" "	

Retteiser 20.12.71 gh.

SIG./DATO	INGENIÖRFIRMA N. TØNNES PEDERSEN A/S	STYKLISTE
8.10.1971 BM/GH	FILTER UNIT 182-120 Electrical Partslist	3 Blade - Blad 1 182-1231-A-4

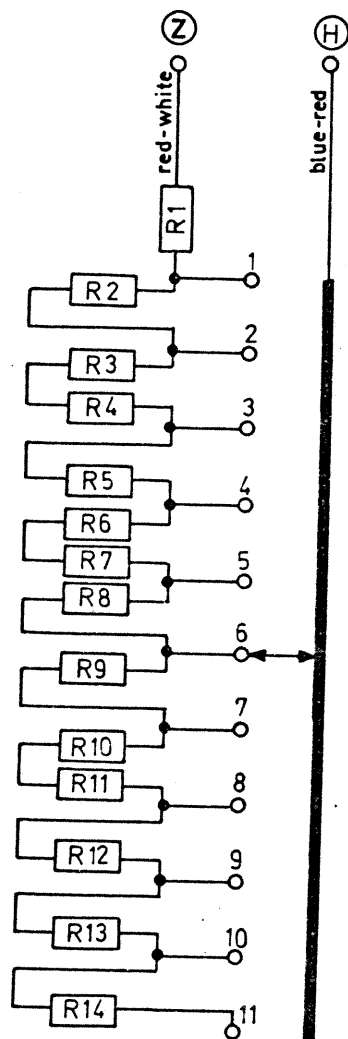


POS.	TEGN. NR.	BETEGNELSE	MATERIALE	ANT.
R51		Resistor 12k $\Omega$ 5% 1/8W	Resista SK 2.	
R52		" 18k $\Omega$ " "	" "	
R53		" 27k $\Omega$ " "	" "	
R54		" 220k $\Omega$ " "	" "	
R55		" 12k $\Omega$ " "	" "	
R56		" 22k $\Omega$ " "	" "	
R57		" 2.7k $\Omega$ " "	" "	
C1		Tantal cap. 1 $\mu$ F 35V ETP1	ERO	
C2		Styroflex cap. 33pF B31310 5%	Siemens	
C3		" " 1500pF " "	"	
C4		Polycarb. cap. 47nF 63V 2% KC1853	ERO	
C5		Styroflex " 33pF B31310 5%	Siemens	
C6		Tantal cap. 100 $\mu$ F 3V ETP3	ERO	
C7		Polycarb. cap. 10nF 63V 2% KC1853	"	
C8		" " 47nF " " "	"	
C9		Styroflex " 33pF B31310 5%	Siemens	
C10		Tantal cap. 100 $\mu$ F 3V ETP3	ERO	
C11		" " 10 $\mu$ F 16V ETP2	"	
C12		" " 100 $\mu$ F 3V ETP3	"	
C13		Styroflex cap. 33pF B31310 5%	Siemens	
C14		Tantal cap. 100 $\mu$ F 3V ETP3	ERO	
C15		Polycarb. cap. 0.1 $\mu$ F 63V 2% KC1853	"	
C16		" " 0.1 $\mu$ F 63V 2%	"	
C17		Tantal cap. 100 $\mu$ F 3V ETP3 KC1853	"	
C18		" " 100 $\mu$ F " "	"	
C19		Styroflex cap. 47pF B31310 5%	Siemens	
C20		Tantal cap. 22 $\mu$ F 16V ETP3	ERO	
C21		Styroflex cap. 100pF B31310 5%	Siemens	
C22		Tantal cap. 10 $\mu$ F 35V ETP3	ERO	
C23		Styroflex cap. 100pF B31310 5%	Siemens	
C24		Tantal cap. 10 $\mu$ F 35V ETP3	ERO	
C25		" " 0.22 $\mu$ F 35V ETP1	"	
C26		" " 10 $\mu$ F/16 ETP2	"	
C27		Poly carb. cap. 0.1 $\mu$ F/63v 2% KC1853	"	
C28		" " 0.1 $\mu$ F/63v 2% KC1853	"	
C29		Styroflex cap. 3,3nF B31310 5%	Siemens	
D1-9		Si-diode 1 N 4148	Texas Instr.	9
D10		" " 1 N 4002	J.R.	
D11		" " 1 N 4148	Texas	
Q1		Transistor BC 161-16	Siemens	
Q2		" BC 107 B(A)	"	
Q3		" BC 107 B(A)	"	
Q4		" BC 107 B(A)	"	
Q5		" BC 177 B(A)	"	
Q6		" BC 177 B(A)	"	
Q7		" BC 107 B(A)	"	
Q8		" BC 107 B(A)	"	
Q9		" BC 177 B(A)	"	

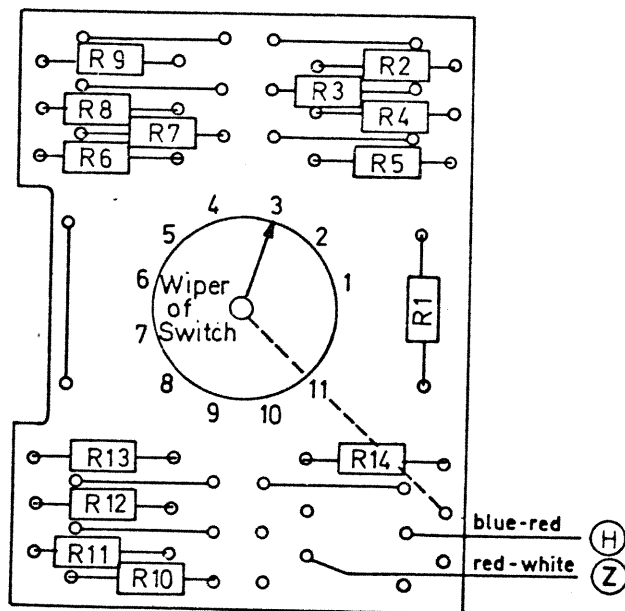
Rettelser  
 17.11.71 gh  
 20.12.71 gh  
 13.1.72 IW

SIG./DATO	INGENIÖRFIRMA N. TØNNES PEDERSEN A/S	STYKLISTE
8.10.1971	FILTER UNIT 182-120	3 Blade - Glad 2
BM-GH	Electrical Partslist	182-1231-A-1

POS.	TEGN. NR.	BETEGNELSE	MATERIALE	ANT.
A1-6 Tr1 Tr2		Linear Amplifier M 100 Input transformer MSP no. 13592/2 Output transformer 13590	NTP J.S. "	6
	182-1540	Printed Circuit 182-1240	NTP	
SIG./DATO		INGENIØRFIRMA N. TØNNES PEDERSEN A/S		STYKLISTE
8.10.1971 BM/GH		FILTER UNIT 182-120 Electrical Partslist		3 Blade - Blad 3 182-1231-A-1



Målestok	INGENIØRFIRMA N. TØNNES PEDERSEN A/s		Tegn. 25-9-70. IW
Tolerance - mm -	Switch Unit 182 - A1 (Part of 182-150)		Godk.
Materiale	Function: Presence, 2 dB Steps		TEGNING NR.
Behandl.	Diagram		182-A530-A-4
Del af			
Antal			



Målestok 2:1

Tolerance mm

Materiale

Behandl.

Del af

Antrj.

INGENIØRFIRMA N. TØNNES PEDERSEN A/S

Switch Unit 182-A1 (Part of 182-150)

Function: Presence, 2 dB Steps  
Component Layout

Tegn. 25-9-70.IW

Godk.

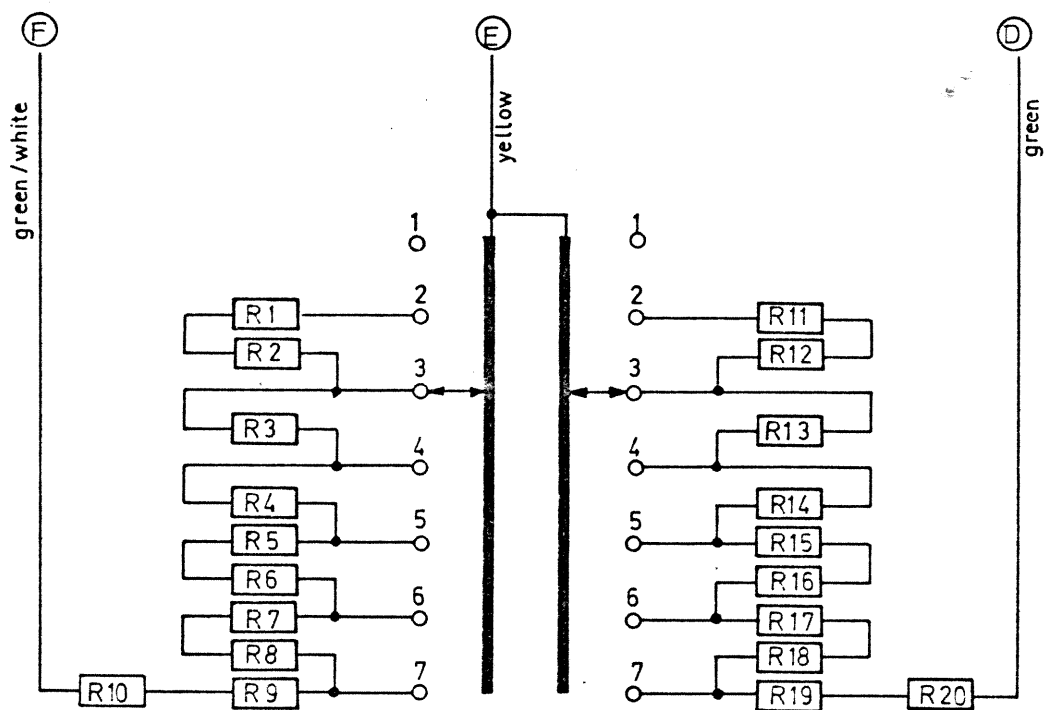
TEGNING NR.

182-A541-A-4

POS.	TEGN. NR.	BETEGNELSE	MATERIALE	ANT.
R1		Resistor 10 $\Omega$ 1/8W 5%	Resista SK2	
R2		" 47 $\Omega$ " "	"	
R3		" 27 $\Omega$ " "	"	
R4		" 33 $\Omega$ " "	"	
R5		" 82 $\Omega$ " "	"	
R6		" 100 $\Omega$ " "	"	
R7		" 15 $\Omega$ " "	"	
R8		" 180 $\Omega$ " "	"	
R9		" 270 $\Omega$ " "	"	
R10		" 100 $\Omega$ " "	"	
R11		" 330 $\Omega$ " "	"	
R12		" 820 $\Omega$ " "	"	
R13		" 2.2k $\Omega$ " "	"	
R14		" 15k $\Omega$ " "	"	
	182-9040	Printed circuit board		
		Switch: Mx 1/1 x 11 K T = 12	EBE	

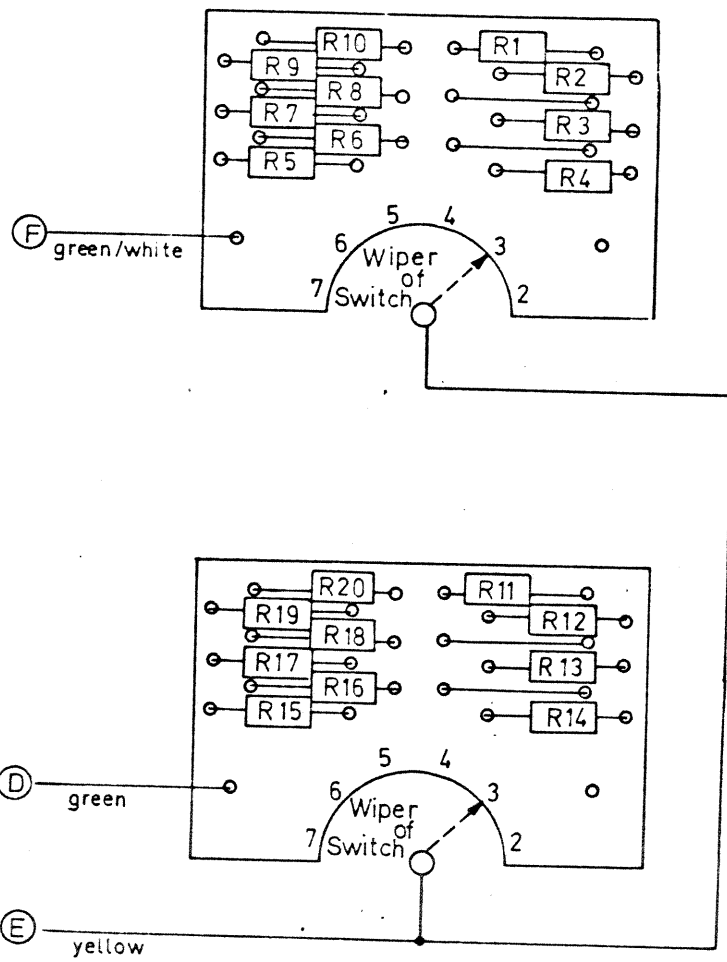
Retteiser

SIG/DATO	INGENIØRFIRMA N. TØNNES PEDERSEN A/S	STYKLISTE
28.9.70 BM/DG	SWITCH UNIT 182-M A Electrical Partlist	1 Blade - Blad 1 182-A5 11-A-1



Målestok	INGENIØRFIRMA N. TØNNES PEDERSEN A/S	Tegn. 28-9-70. IW
Tolerance mm	Switch Unit 182-A2 (Part of 182-150)	Godk.
Materiale	Function: Presence, Frequency Selection Diagram	TEGNING NR.
Behandl.		182-A630-A-4
Del af		
Ansvar		

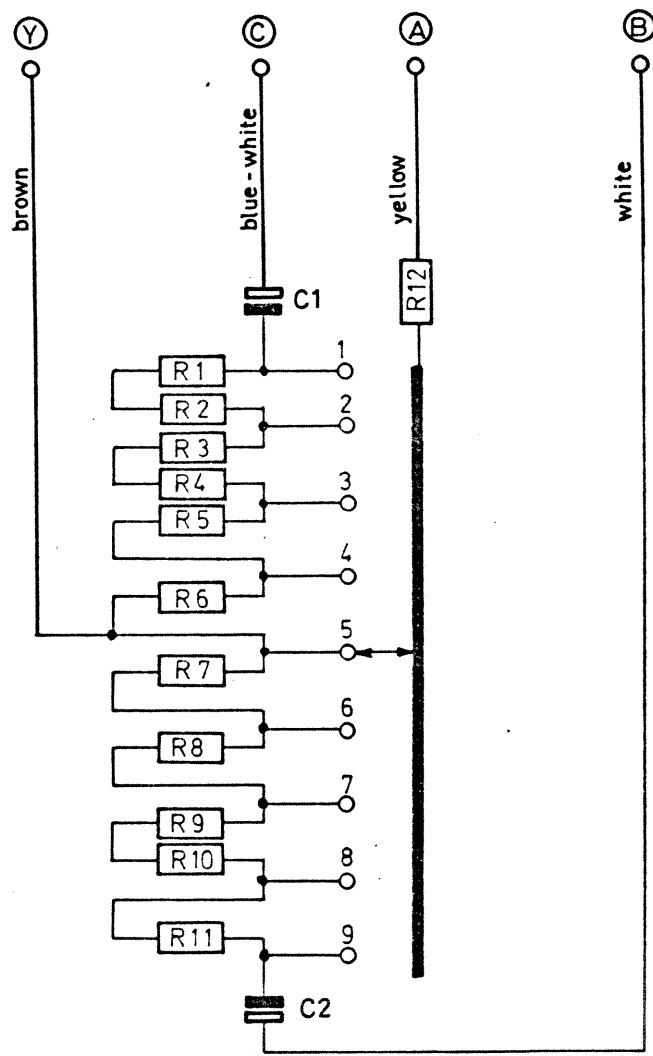
Rettelser



Scale: 2:1 Drawing No.: Revision: Date: Author: Checker:	INGENIØRFIRMA N. TØNNES PEDERSEN A/S	Tegn. 28-9-70 IW
	Switch Unit 182-A2 (Part of 182-150)	Gørk.
	Function: Presence, Frequency Selection Component Layout	TEGNING NR. 182-A641-A-4

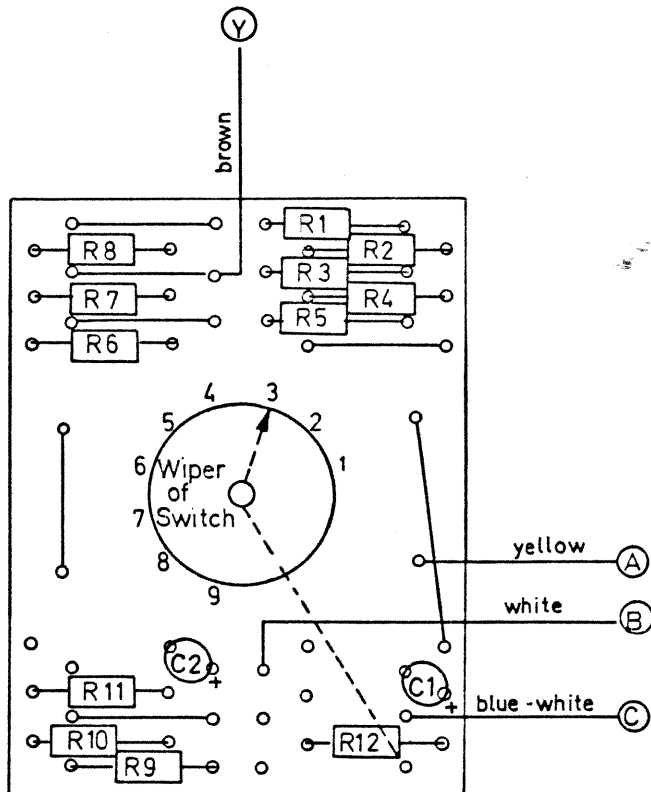
POS.	TEGN. NR.	BETEGNELSE	MATERIALE	ANT.
R1/ R11		Resistor 3.9k $\Omega$ 1/8W 5%	Resistor SK2	2
R2/ R12		" 10k $\Omega$ " "	"	2
R3/ R13		" 4.7k $\Omega$ " "	"	2
R4/ R14		" 2.2k $\Omega$ " "	"	2
R5/ R15		" 1.2k $\Omega$ " "	"	2
R6/ R16		" 68 $\Omega$ " "	"	2
R7/ R17		" 680 $\Omega$ " "	"	2
R8/ R18		" 39 $\Omega$ " "	"	2
R9/ R19		" 1.5k $\Omega$ " "	"	2
R10/ R20	182-9040	Printed circuit board (divided into halves)  Switch: Mx 2/2 x 7 K T = 12	NTP  EBE	2
SIG./DATO		INGENIÖRFIRMA N. TØNNES PEDERSEN 4/5		STYKLISTE
30.9.70 BM/DG		SWITCH EXT 182-A2-A Electrical Partslist		2 Blade - Blad 182-1631-A-1





Retfælses 17.11.71 IW

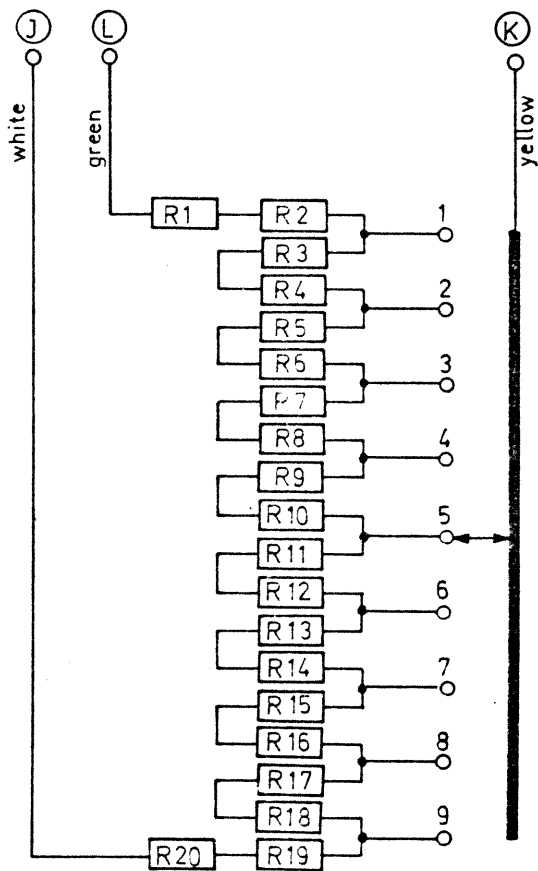
Målestok	INGENIØRFIRMA N. TØNNES PEDERSEN A/S	Figur 28-9-70. IW
Tolerance mm	Switch Unit 182-A3 (Part of 182-150)	Opdr.
Materiale		
Behandl.	Function: 10 kHz - 3 dB Steps	
Det. at	Diagram.	182-A730-A-4
Antal		



Målestok	2:1	INGENIØRFIRMA N. TØNNES PEDERSEN A/s		Tegn.	28-9-70. IW
Tolerance	- mm + "	Switch Unit 182-A3 (Part of 182-150)		Godk.	
Materiale		Function: 10 kHz - 3 dB Steps Component Lay out		TEGNING NR.	
Behandl.				182 -A741-A-4	
Del af					
Antal					

Rettelser 49.2.71 IW  
 17.11.71 IW





Modulnr.

Fabrikatnr.

Materialnr.

Revisionsnr.

Dato

INGENIØRFIRMA N. TØNNES PEDERSEN A/S

Switch Unit 182-A4 (Part of 182-150)

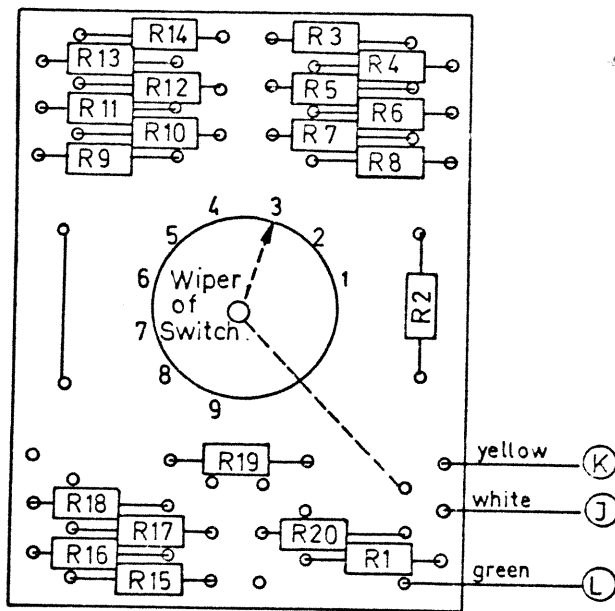
Function: 60Hz - 3 dB Steps  
Diagram

Tegn. 28-9-70, IW

Godk.

TEGNING NR.

182-A830-A-4



Målestok	2:1	INGENIØRFIRMA N. TØNNES PEDERSEN A/S	Tegn.	25-9-70. IW
Tolerance	mm		Switch Unit 182-A4 (Part of 182-150)	Godk.
Materiale		Funktion: 60 Hz - 3dB Steps Component Layout	TEGNING NR.	
Behandl.			182-A841-A4	
Del af				
Antal				

POS.	TEGN. NR.	BETEGNELSE	MATERIALE	ANT.
R1		Resistor 680 $\Omega$ 1/8 W 5%	Resista SK2	
R2		" 3.9k $\Omega$ " "	"	
R3		" 1.8k $\Omega$ " "	"	
R4		" 56 $\Omega$ " "	"	
R5		" 2.2k $\Omega$ " "	"	
R6		" 220 $\Omega$ " "	"	
R7		" 2.7k $\Omega$ " "	"	
R8		" 390 $\Omega$ " "	"	
R9		" 3.3k $\Omega$ " "	"	
R10		" 220 $\Omega$ " "	"	
R11		" 3.3k $\Omega$ " "	"	
R12		" 220 $\Omega$ " "	"	
R13		" 2.7k $\Omega$ " "	"	
R14		" 270 $\Omega$ " "	"	
R15		" 220 $\Omega$ " "	"	
R16		" 2.2k $\Omega$ " "	"	
R17		" 56 $\Omega$ " "	"	
R18		" 1.8k $\Omega$ " "	"	
R19		" 3.9k $\Omega$ " "	"	
R20		" 680 $\Omega$ " "	"	
	182-9040	Printed circuit board	NTP	
		Switch: Mx 1/1 x 9 K T = 12	EBE	
SIG./DATO		INGENIØRFIRMA N. TØNNES PEDERSEN A/S	STYKLISTE	
30.9.70 BM/DG		SWITCH UNIT 182-A4 Electrical Partslist	1. Blade - Blad 1 182-1801-A-1	