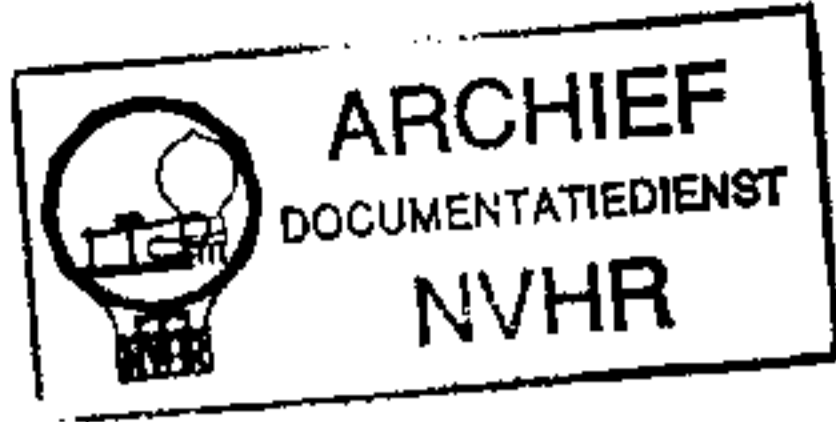


Met dank aan A.R.A van Rossum  
Ned. Ver. v. Historie v/d Radio



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**REGULATED  
POWER SUPPLY**

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E 030-3

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**DELTA ELEKTRONIKA BV**



ZIERIKZEE  
NETHERLANDS

**DELTA ELEKTRONIKA BV**

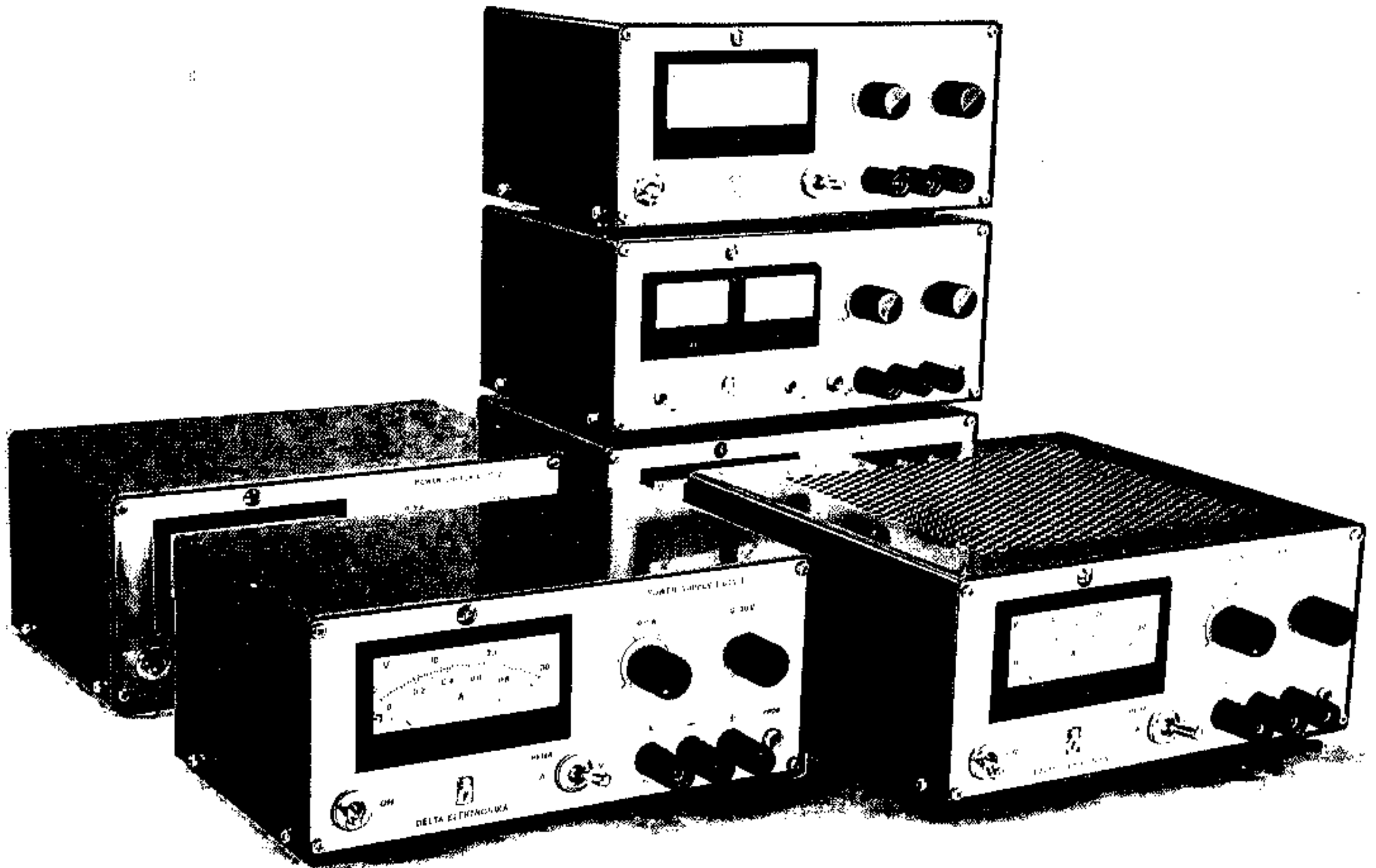


P.O. BOX 27

ZIERIKZEE

NETHERLANDS

TEL (01110) 3656 TLX 55349



**REGULATED  
POWER SUPPLIES**

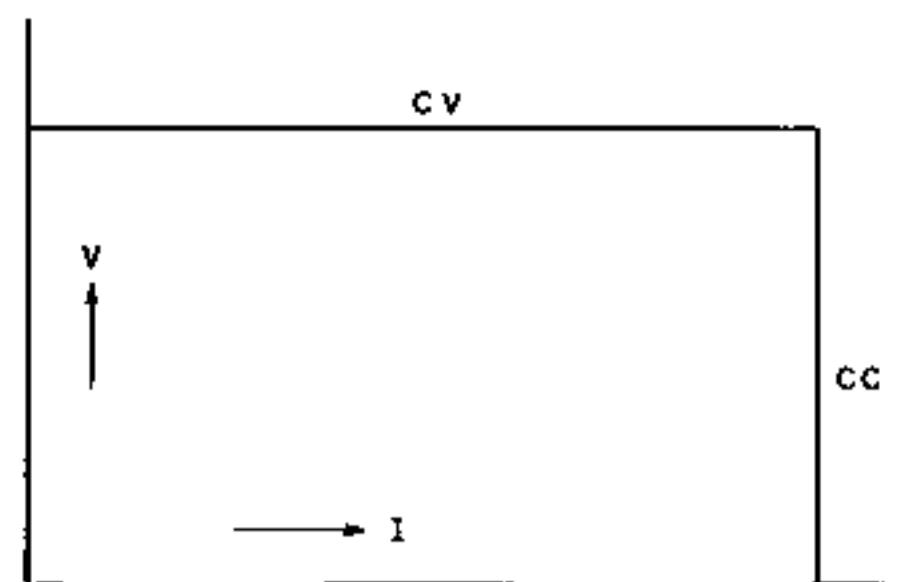
<b>E 015-2</b>	<b>0-15 V</b>	<b>0-2 A</b>
<b>E 030-1</b>	<b>0-30 V</b>	<b>0-1 A</b>
<b>E 030-3</b>	<b>0-30 V</b>	<b>0-3 A</b>
<b>E 060-0.6</b>	<b>0-60 V</b>	<b>0-0.6 A</b>
<b>E 0300-0.1</b>	<b>0-300 V</b>	<b>0-0.1 A</b>
<b>E 018-0.6 D</b>	<b>±0-18 V</b>	<b>0.6 A</b>

## DESCRIPTION

### E 015-2, E 030-1 and E 060-0.6

These power supplies are of the linear transistor series regulator type. They can be used as a constant voltage source with a sharply limited current, or as a constant current source with a sharply limited open voltage. Both limits are continuously variable from zero to full range. The change of mode occurs at the crossing of the voltage and current settings.

A ten-turn potentiometer is used to provide a high resolution voltage control. For current control a single turn potentiometer (resolution 0,1 %) is used to enable an approximate indication of the current setting.



### E 030-3 and E 0300-0.1

These models also have a linear transistor series regulator which however is preceded by an SCR pre-regulator for better efficiency.

This pre-regulator keeps the rectified voltage in accordance with the output voltage to keep dissipation in the power transistors low.

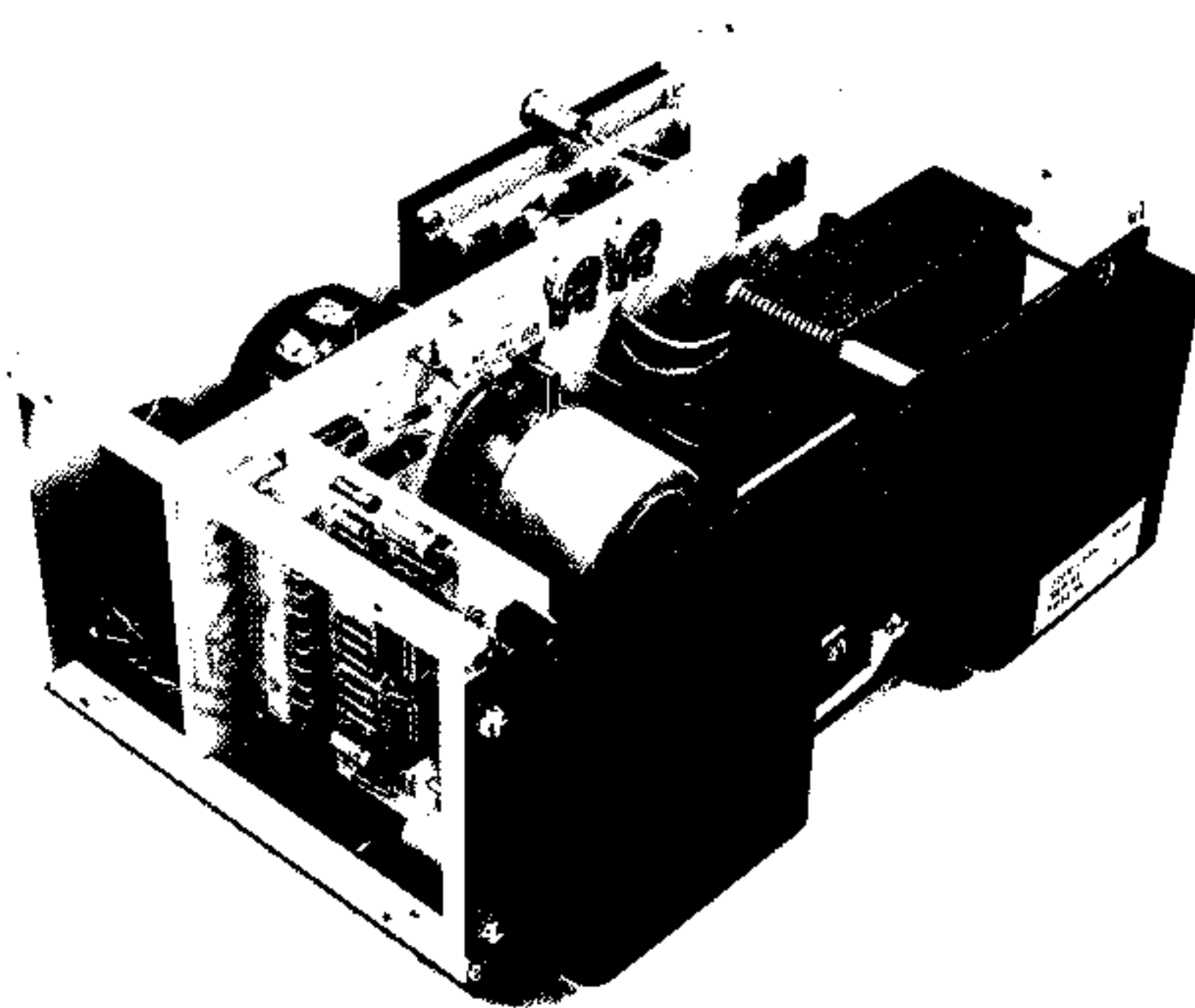
### E 018-0.6 D

This model was designed to supply plus and minus 15 volts for design work with operational amplifiers. It provides a plus 0–18 V and a minus 0–18 V which are tracking and can be varied with one ten-turn potentiometer. With the second potentiometer the ratio of the positive and negative voltage can be varied between 1/2 and 2. The positive and negative outputs have coupled overload protection circuits. This means that both output voltages will decrease proportionally if one is overloaded. Also if one output is short circuited, both outputs will drop to zero. The E 018-0.6 D has a fixed constant current overload characteristic. Independent of the ratio setting, the positive and negative output can never exceed a limit of about 18,5 V.

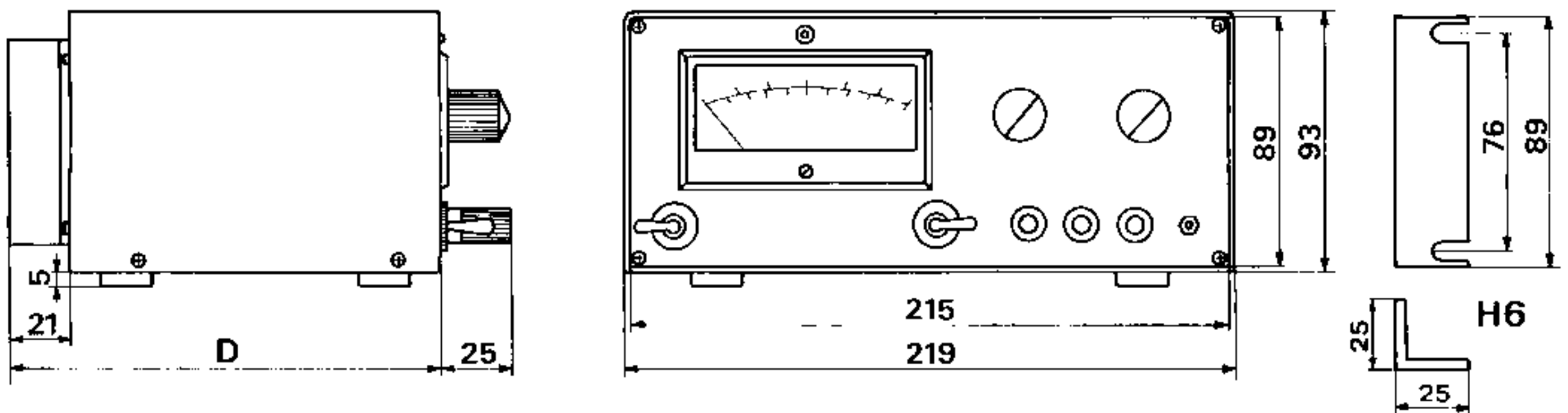
## SPECIFICATIONS

<b>Input voltage</b>	220 V 50 Hz standard. Other input voltages at special order.
<b>Input-output isolation</b>	1500 V AC rms 1 minute (VDE 0550).
<b>Max. voltage between output and case</b>	500 V DC.
<b>Max. ambient temperature</b>	45°C.
<b>Meter</b>	Accuracy 1.5 % of fsd, selector switch for voltage and current measurement.
<b>Parallel and series connection</b>	Units can be connected parallel and in series. Series connection up to 300 V.
<b>Weight and size</b>	2.8 kg 219 x 93 x 154 mm 30 Watts type. 5.7 kg 219 x 93 x 222 mm E 030-3

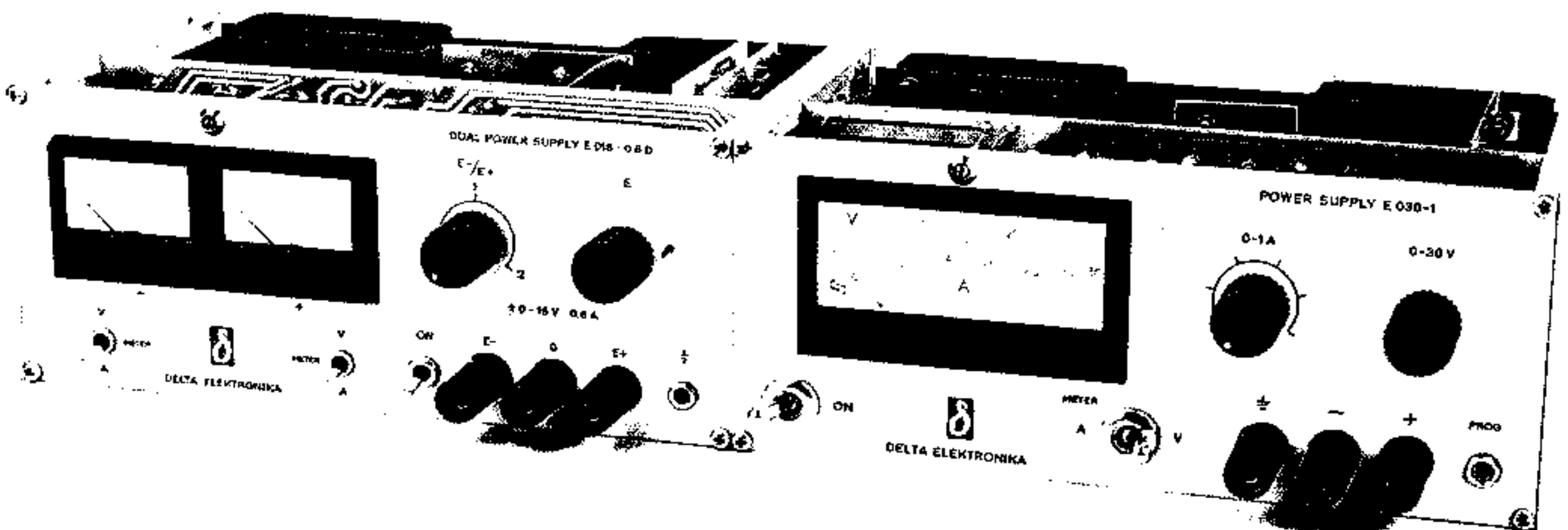
SPECIFICATIONS	E 015-2	E 030-1	E 030-3	E 060-0.6	E 0300-0.1	E 018-0.6 D
<p><b>CONSTANT VOLTAGE MODE</b></p> <p>Line regulation for 198–242 V variation</p> <p>Load regulation for 0–100 % variation.</p> <p>Temp. coefficient per °C (% of V max)</p> <p>Drift per 8 hours under constant conditions after 15 minutes warm up</p> <p>Ripple voltage, rms</p> <p>Output impedance at 100 kHz load frequency</p> <p>Recovery time to within 30 mV after a step load change from 10 to 100 %</p> <p>Remote programming of output voltage by resistance</p> <p><b>CONSTANT CURRENT MODE</b></p> <p>Line regulation for 198–242 V variation</p> <p>Load regulation for zero to max. load</p> <p>Temp. coefficient per °C (% of I max.)</p> <p>Ripple current rms</p>	1 mV	2 mV	2 mV	4 mV	10 mV	5 mV
	2 mV	4 mV	4 mV	8 mV	20 mV	5 mV
	0.01 %	0.01 %	0.01 %	0.01 %	0.01 %	0.01 %
	0.1 %	0.1 %	0.1 %	0.1 %	0.1 %	0.1 %
	0.1 mV	0.1 mV	0.1 mV	0.1 mV	0.5 mV	0.1 mV
	100 mΩ	100 mΩ	100 mΩ	100 mΩ	10 Ω	100 mΩ
	15 μS	15 μS	15 μS	15 μS	30 μS	15 μS
	0–5 kΩ	0–5 kΩ	0–5 kΩ	0–10 kΩ	—	—
	0.3 mA	0.3 mA	0.4 mA	0.3 mA	0.03 mA	—
	2 mA	2 mA	4 mA	2 mA	0.5 mA	—
	0.05 %	0.05 %	0.05 %	0.05 %	0.05 %	—
	0.1 mA	0.1 mA	0.1 mA	0.1 mA	0.1 mA	—



Simple construction and use of high quality components forms unique reliable unit.



For E 030-3 D = 222 mm, for all other models D = 154 mm.



Two uncased units can be mounted side by side and with the addition of two H6 brackets can be inserted in a 19" rack.

R = ohm

1 = 680 1W  
 2 = 270  
 3 = CR  
 4 = 470  
 5 = 3,9 k  
 6 = 6,8 k  
 7 = 1,8 k  
 8 = 1 M  
 9 = 470  
 10 = —  
 11 = 27 k  
 12 = CR  
 13 = 470  
 14 = 47  
 15 = 470  
 16 = 470  
 17 = 15 k  
 18 = CR  
 19 = 1,8 k  
 20 = CR  
 21 = CR  
 22 = 560 k  
 23 = 560  
 24 = 330  
 25 = 27 k  
 26 = 12 k  
 27 = 2,2 k  
 28 = 2,7 k  
 29 = 15 k  
 30 = 47  
 31 = 10  
 32 = 10  
 33 = 3,3 k  
 34 = 15 k  
 35 = 100 k  
 36 = 220  
 37 = 2,2 k 1W  
 38 = CR  
 39 = 220 k  
 40 = 10  
 41 = 1,5 k 1W  
 42 = 5,6 M  
 43 = 1 7W WW  
 44 = 1 7W WW  
 45 = 1 k trim.  
 46 = 1,5 k  
 47 = 12 k  
 48 = 330 k  
 49 = 33 k  
 50 = 1 k trim.  
 51 = 5 k potm.  
 52 = 5 k 10 turn potm.

C = microfarad

1 = 47 63 V  
 2 = 22 25 V  
 3 = 0,047 250 V ..  
 4 = 2,2 35 V tantaal  
 5 = CC  
 6 = 22 25 V  
 7 = CC  
 8 = 1 250 V  
 9 = 0,47 250 V  
 10 = 0,22 63 V  
 11 = 2200 63 V  
 12 = 2200 63 V  
 13 = 10 35 V  
 14 = 10 100 V  
 15 = 0,1 630 V  
 16 = —  
 17 = 220 63 V  
 18 = 0,33 100 V  
 19 = 0,01 500 V  
 20 = 0,01 500 V  
 21 = 0,07 + 2x2500 250 V

D

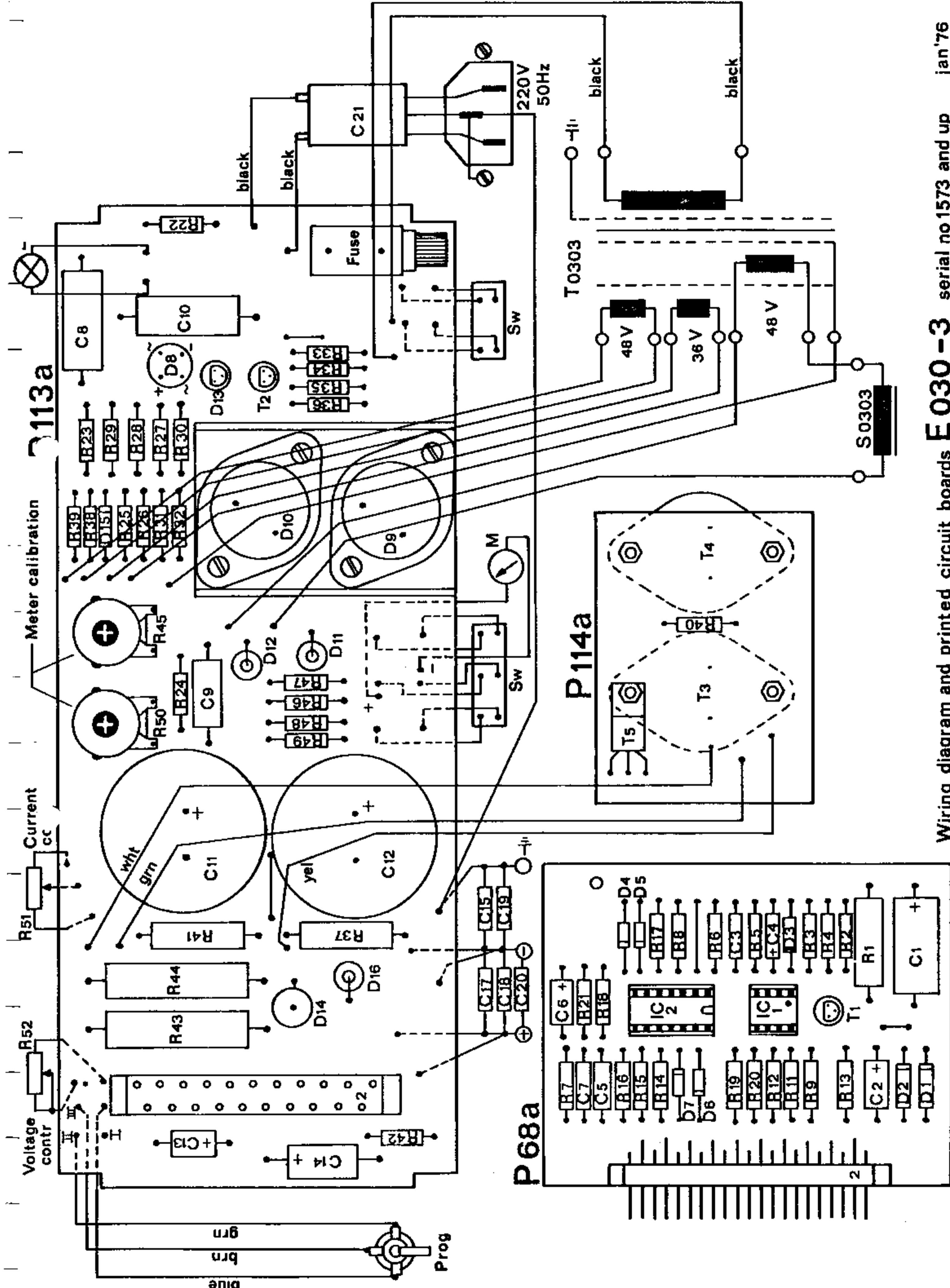
1 = 1N4003 TI  
 2 = ZY 6,2 ITT  
 3 = 1N825 ITT  
 4 = 1N4148 ITT  
 5 = 1N4148 ITT  
 6 = 1N4148 ITT  
 7 = 1N4148 ITT  
 8 = W 01 GI  
 9 = 2N3668 RCA  
 10 = 2N3668 RCA  
 11 = 60 S1 IR  
 12 = 60 S1 IR  
 13 = D 13 T 1 GE  
 14 = MR 1031 B Mot  
 15 = ZD 5,1 ITT  
 16 = 60 S1 IR

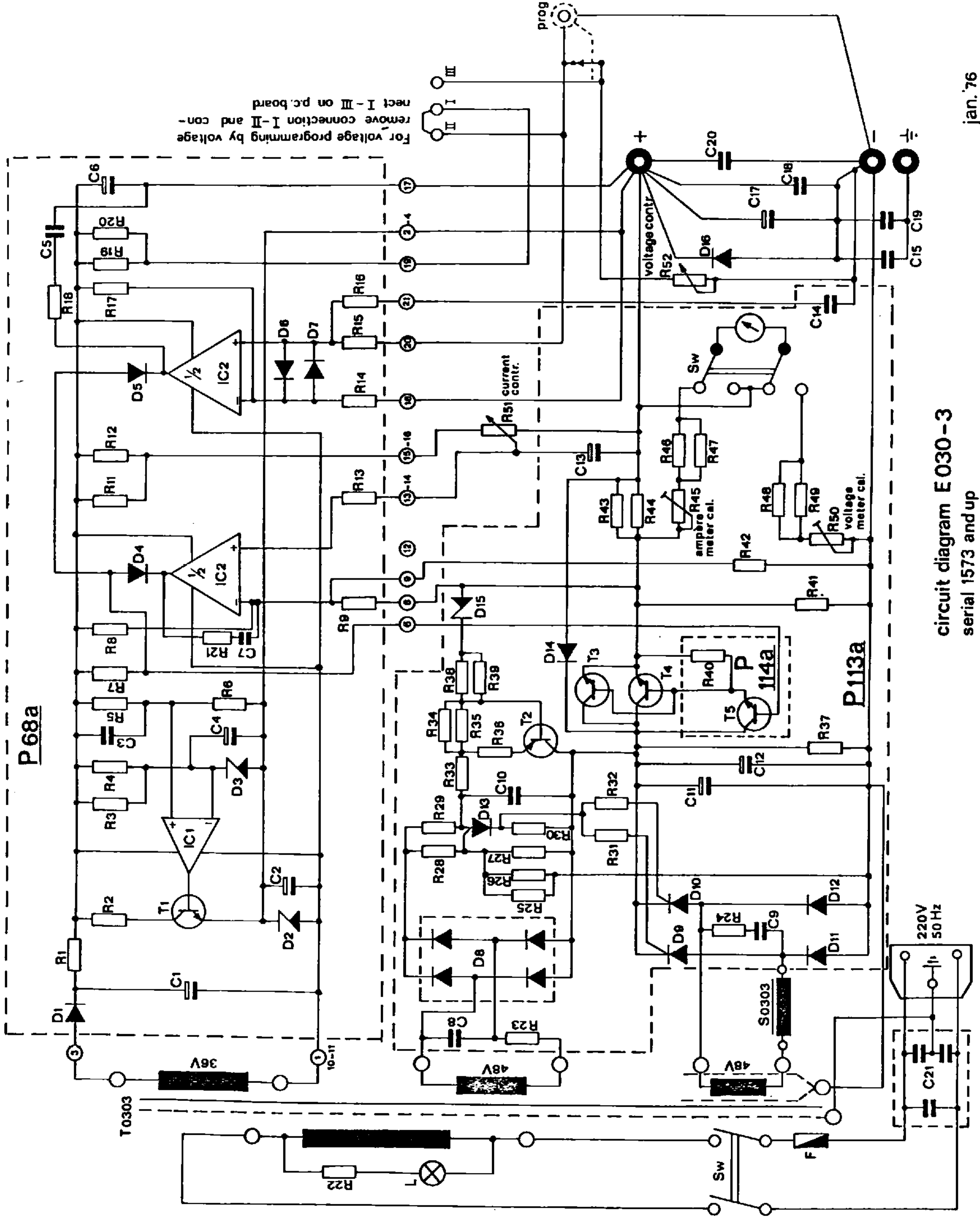
T

1 = BC 182 TI  
 2 = BC 212 TI  
 3 = 2N 3055 RCA  
 4 = 2N 3055 RCA  
 5 = TIP 29 A TI

F = Fuse 2 A delay 5x20 mm.  
 CR = Calibration resistor.  
 CC = Calibration capacitor.  
 WW = Wire Wound resistor.  
 All other resistors  $\frac{1}{2}$  W 2% metal film.

IC 1 = SN 72741 P TI  
 IC 2 = SN 72747 TI

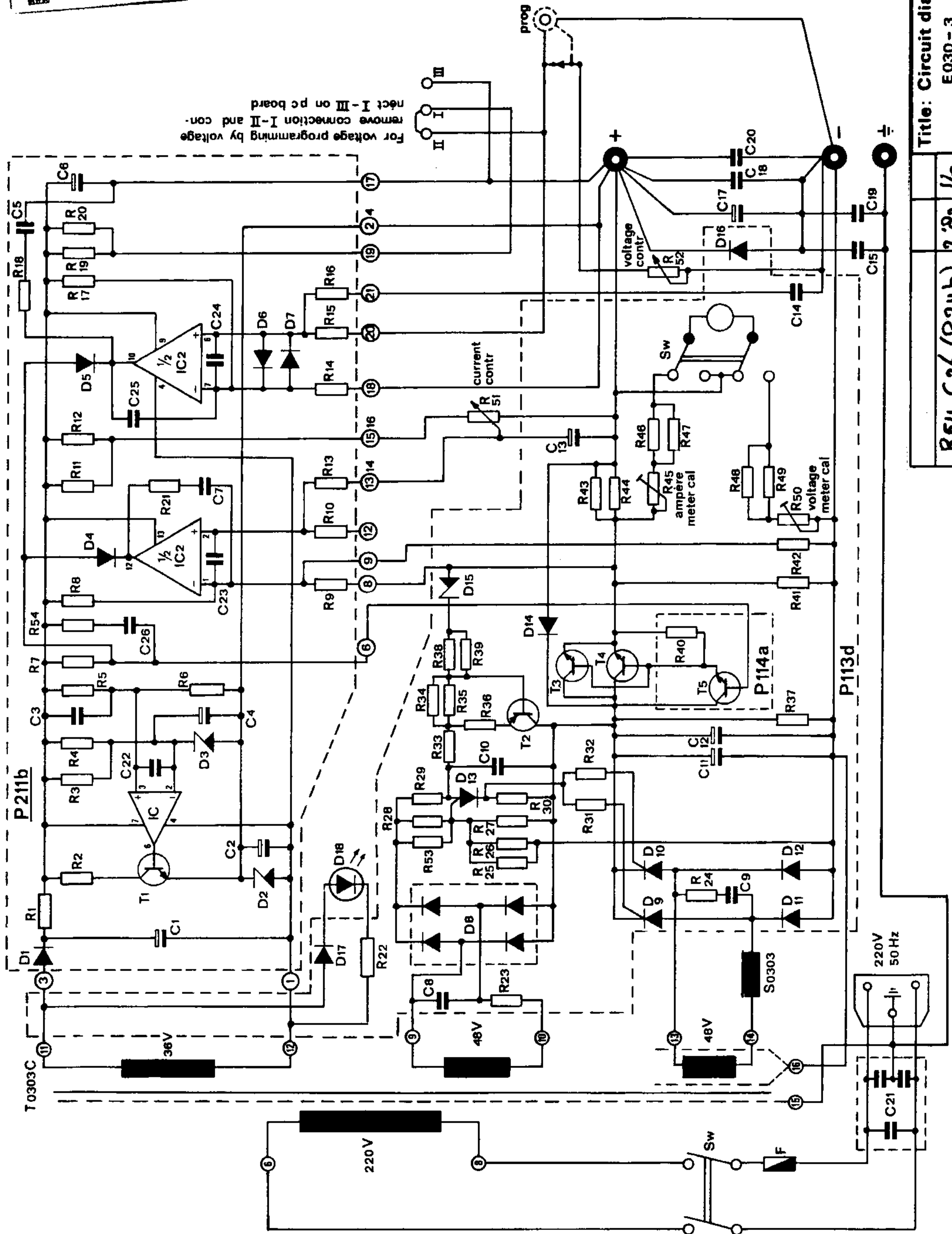
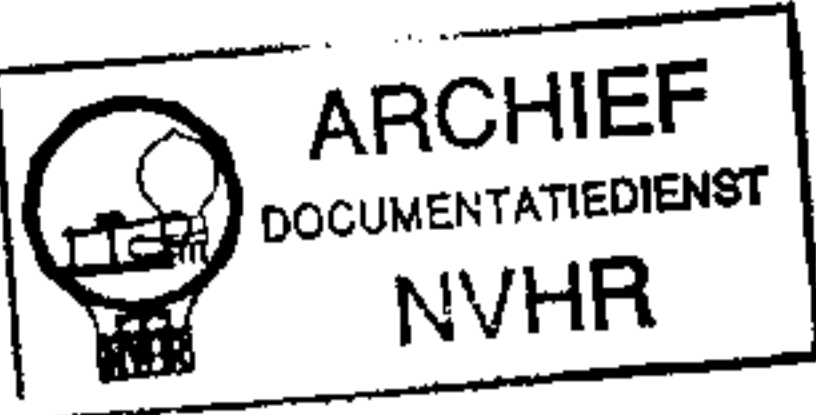




For voltage programming by voltage  
remove connection I-II and con-  
nect I-III on p.c. board

circuit diagram E030-3  
serial 1573 and up





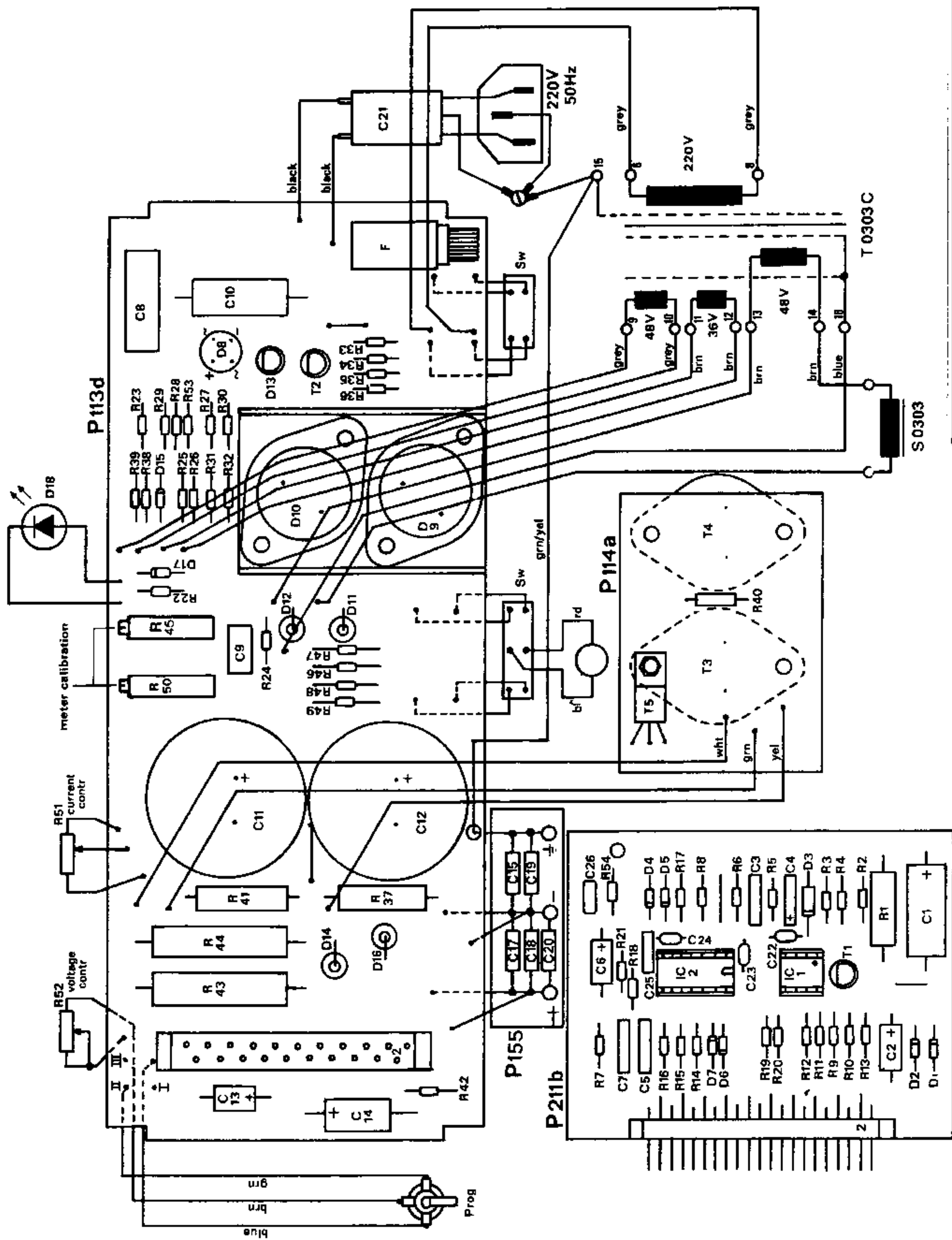
For voltage programming by voltage  
remove connection I-II and con-  
nect I-III on pc board

Title: Circuit diagram		E030-3	
R54, C26 (P211b)	2-82	Vr	
(Led) R22, D17, D18	3-82	Vr	
Modifications	Date	App	
	4-'78		
		delta elektronika bv	

R = Ohm	C = microfarad
1 = 680 1W	1 = 47 63 V
2 = 270	2 = 22 25 V
3 = CR	3 = 0,047 250 V
4 = 470	4 = 2,2 35 V
5 = 3,9 k	5 = CC
6 = 6,8 k	6 = 22 25 V
7 = 1,8 k	7 = CC
8 = 1 M	8 = 1 250 V
9 = 470	9 = 0,47 250 V
10 = -	10 = 0,22 63 V
11 = 27 k	11 = 2200 63 V
12 = CR	12 = 2200 63 V
13 = 470	13 = 10 40 V
14 = 47	14 = 10 100 V
15 = 470	15 = 0,1 630 V
16 = 470	16 = -
17 = 15 k	17 = 220 63 V
18 = CR	18 = 0,33 100 V
19 = 1,8 k	19 = 0,01 500 V
20 = CR	20 = 0,01 500 V
21 = CR	21 = 0,07+2x2500 250 V
22 = 3,3 k	22 = 0,0001 250 V
23 = 560	23 = 0,0001 250 V
24 = 330	24 = 0,0001 250 V
25 = 27 k	25 = 0,01 250 V
26 = 12 k	26 = CC
27 = 2,2 k	D 1 = 1N4003 TI
28 = 2,7 k	2 = ZY 6,2 ITT
29 = 15 k	3 = 1N825 ITT
30 = 47	4 = 1N4148 ITT
31 = 10	5 = 1N4148 ITT
32 = 10	6 = 1N4148 ITT
33 = 3,3 k	7 = 1N4148 ITT
34 = 15 k	8 = B125C1000 Hermann
35 = 100 k	9 = 2N3668 RCA
36 = 220	10 = 2N3668 RCA
37 = 2,2 k 1W	11 = 60 S 1 IR
38 = CR	12 = 60 S <del>1</del> 4 IR
39 = 270 k	13 = D 13 T 1 GE
40 = 10	14 = 60 S 1 IR
41 = 1,5 k 1W	15 = ZD 5,1 ITT
42 = 5,6 M	16 = 60 S 1 IR
43 = 1 7W WW	17 = 1N4148 ITT
44 = 1 7W WW	18 = 133 HR Sloan
45 = 1 k trim.	IC 1 = SN72741 P TI
46 = 1,5 k	IC 2 = SN72747 TI
47 = 12 k	F = Fuse 2 A delay 5 x 20 mm
48 = 180 k	CR = Calibration resistor.
49 = 33 k	CC = Calibration capacitor.
50 = 2 k trim.	WW = Wire wound resistor.
51 = 5 k potm.	All other resistors 0,4W 2% metal-film.
52 = 5 k 10 turn.potm.	
53 = CR	
54 = CR	
T 1 = BC 182 TI	
2 = BC 212 TI	
3 = 2N3055 RCA	
4 = 2N3055 RCA	
5 = BD 239 RCA	

			Title: Part list E030-3
R54, C26 (P211b)	2.82	U <sub>r</sub>	Date: 4-'78
(Led) R22, D17, D18	3.82	U <sub>r</sub>	
Modifications	Date	App.	delta elektronika bv

δ



Title: Wiring diagram		E030-3	
R54, C26 (P211b)	2.82	Vr	Vr
(Led) R22, D17, D18	3.82	Vr	Vr
Modifications	Date	App	Date
	4-'78		



delta elektronika bv