

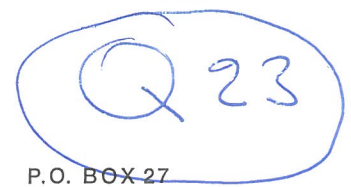
A+D PRODUCTS AG

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**REGULATED
POWER SUPPLIES**

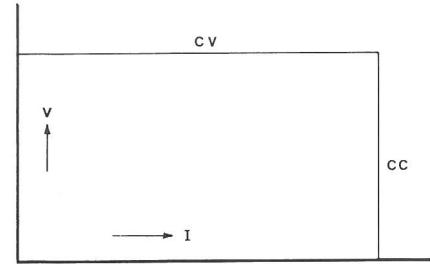
| | | |
|-----------------------|-----------------|----------------|
| E 015-2 | 0-15 V | 0-2 A |
| E 030-1 | 0-30 V | 0-1 A |
| <u>E 030-3</u> | 0-30 V | 0-3 A |
| E 060-0.6 | 0-60 V | 0-0.6 A |
| E 0300-0.1 | 0-300 V | 0-0.1 A |
| E 018-0.6 D | ± 0-18 V | 0.6 A |

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 preceeded 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.

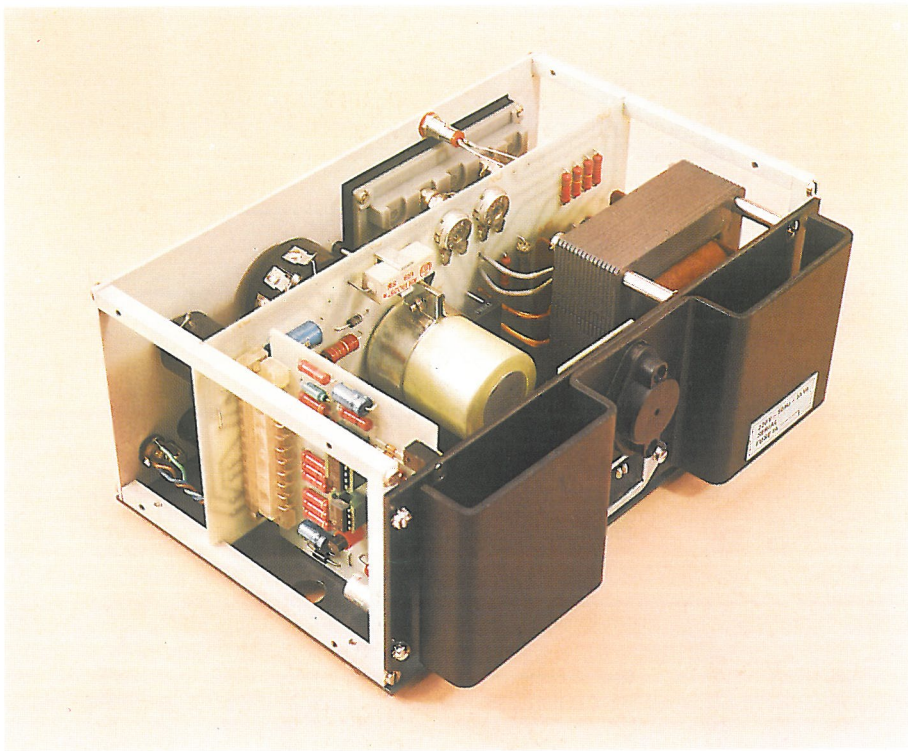
E 018-0.6 D

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 $\frac{1}{2}$ 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 ever exceed a limit of about 18,5 V.

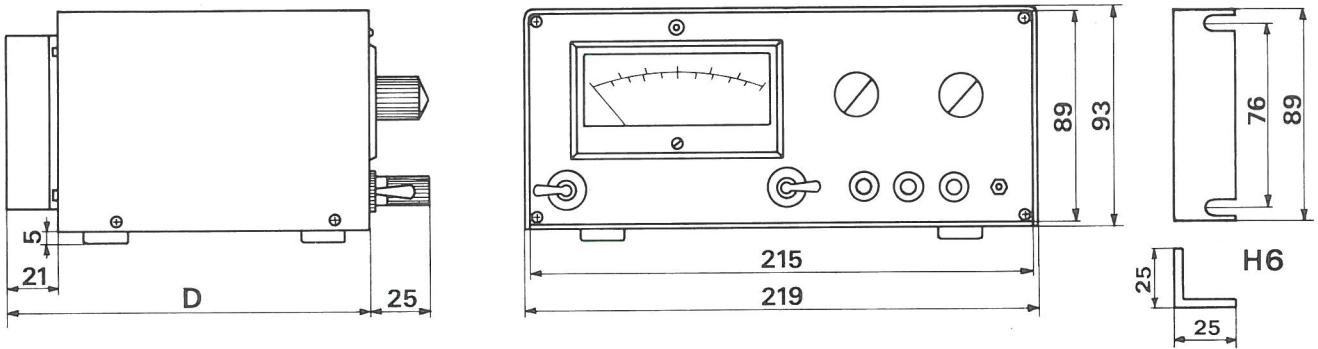
SPECIFICATIONS

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

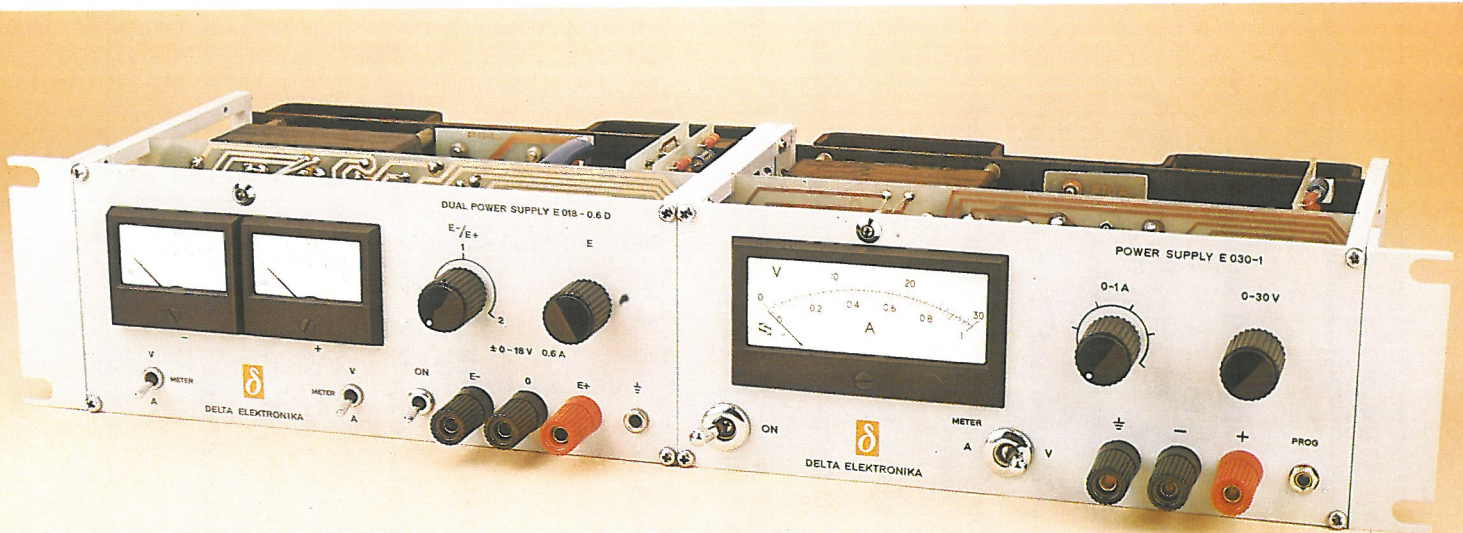
| SPECIFICATIONS | E 015-2 | E 030-1 | <u>E 030-3</u> | E 060-0.6 | E 0300-0.1 | E 018-0.6 D |
|---|---------|---------|----------------|-----------|------------|-------------|
| CONSTANT VOLTAGE MODE | | | | | | |
| Line regulation for 198–242 V variation | 1 mV | 2 mV | 2 mV | 4 mV | 10 mV | 5 mV |
| Load regulation for 0–100 % variation. | 2 mV | 4 mV | 4 mV | 8 mV | 20 mV | 5 mV |
| Temp. coefficient per °C (% of V max) | 0.01 % | 0.01 % | 0.01 % | 0.01 % | 0.01 % | 0.01 % |
| Drift per 8 hours under constant conditions after 15 minutes warm up | 0.1 % | 0.1 % | 0.1 % | 0.1 % | 0.1 % | 0.1 % |
| Ripple voltage, rms | 0.1 mV | 0.1 mV | 0.1 mV | 0.1 mV | 0.5 mV | 0.1 mV |
| Output impedance at 100 kHz load frequency | 100 mΩ | 100 mΩ | 100 mΩ | 100 mΩ | 10 Ω | 100 mΩ |
| Recovery time to within 30 mV after a step load change from 10 to 100 % | 15 μS | 15 μS | 15 μS | 15 μS | 30 μS | 15 μS |
| Remote programming of output voltage by resistance | 0–5 kΩ | 0–5 kΩ | 0–5 kΩ | 0–10 kΩ | — | — |
| CONSTANT CURRENT MODE | | | | | | |
| Line regulation for 198–242 V variation | 0.3 mA | 0.3 mA | 0.4 mA | 0.3 mA | 0.03 mA | — |
| Load regulation for zero to max. load | 2 mA | 2 mA | 4 mA | 2 mA | 0.5 mA | — |
| Temp. coefficient per °C (% of I max.) | 0.05 % | 0.05 % | 0.05 % | 0.05 % | 0.05 % | — |
| Ripple current rms | 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 = 3,3 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 = 270 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 = 180 k

49 = 33 k

50 = 2 k trim.

51 = 5 k potm.

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

C = microfarad

1 = 47 63 V

2 = 22 25 V

3 = 0,047 250 V

4 = 2,2 35 V

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 40 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

22 = 0,0001 250 V

23 = 0,0001 250 V

24 = 0,0001 250 V

25 = 0,01 250 V

26 = CC

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 = B125C1000 Hermann

9 = 2N3668 RCA

10 = 2N3668 RCA

11 = 60 S 1 IR

12 = 60 S 14 IR

13 = D 13 T 1 GE

14 = 60 S 1 IR

15 = ZD 5,1 ITT

16 = 60 S 1 IR

17 = 1N4148 ITT

18 = 133 HR Sloan

IC 1 = SN72741 P TI

IC 2 = SN72747 TI

F = Fuse 2 A delay 5 x 20 mm

CR = Calibration resistor.

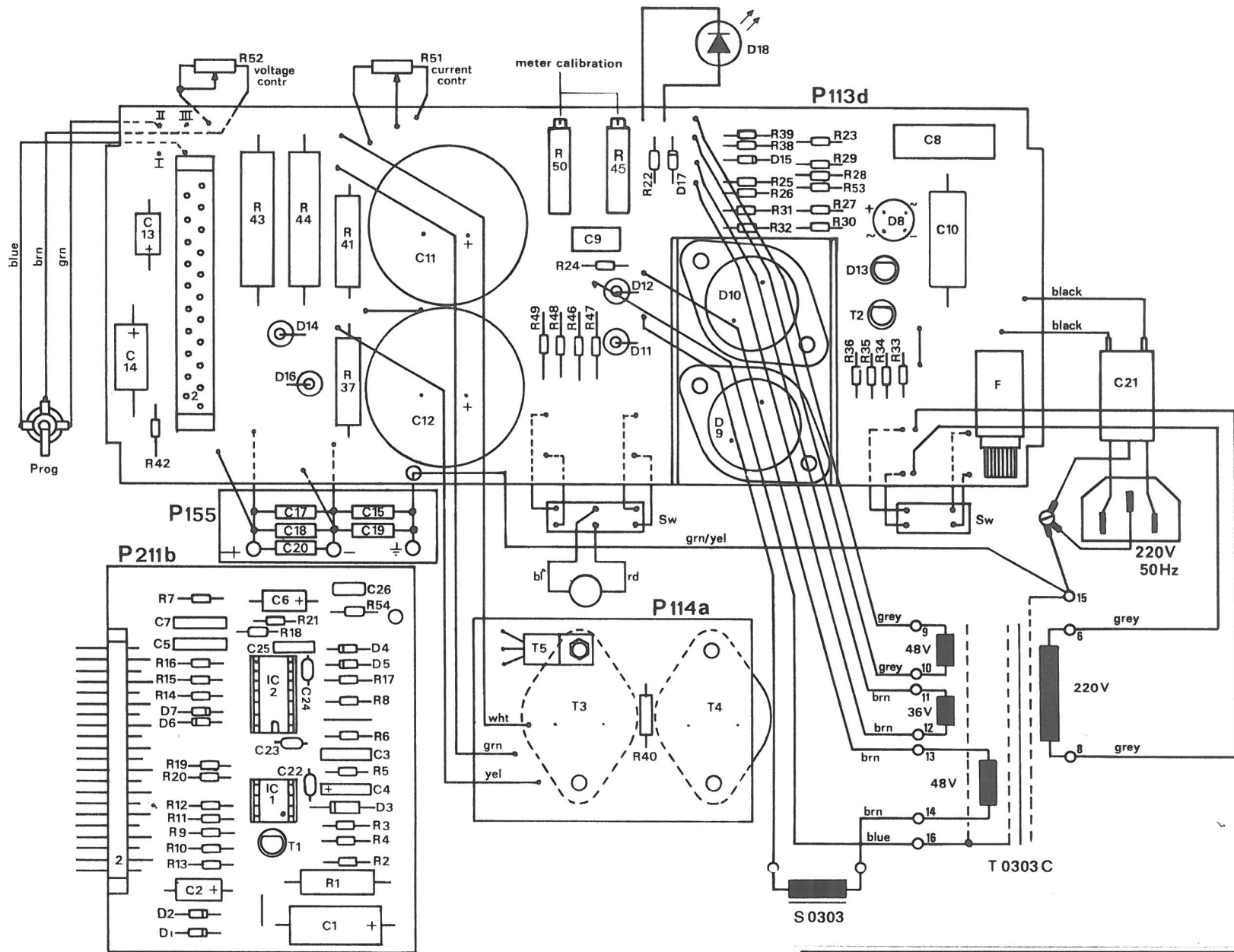
CC = Calibration capacitor.

WW = Wire wound resistor.

All other resistors 0,4W 2% metal-film.

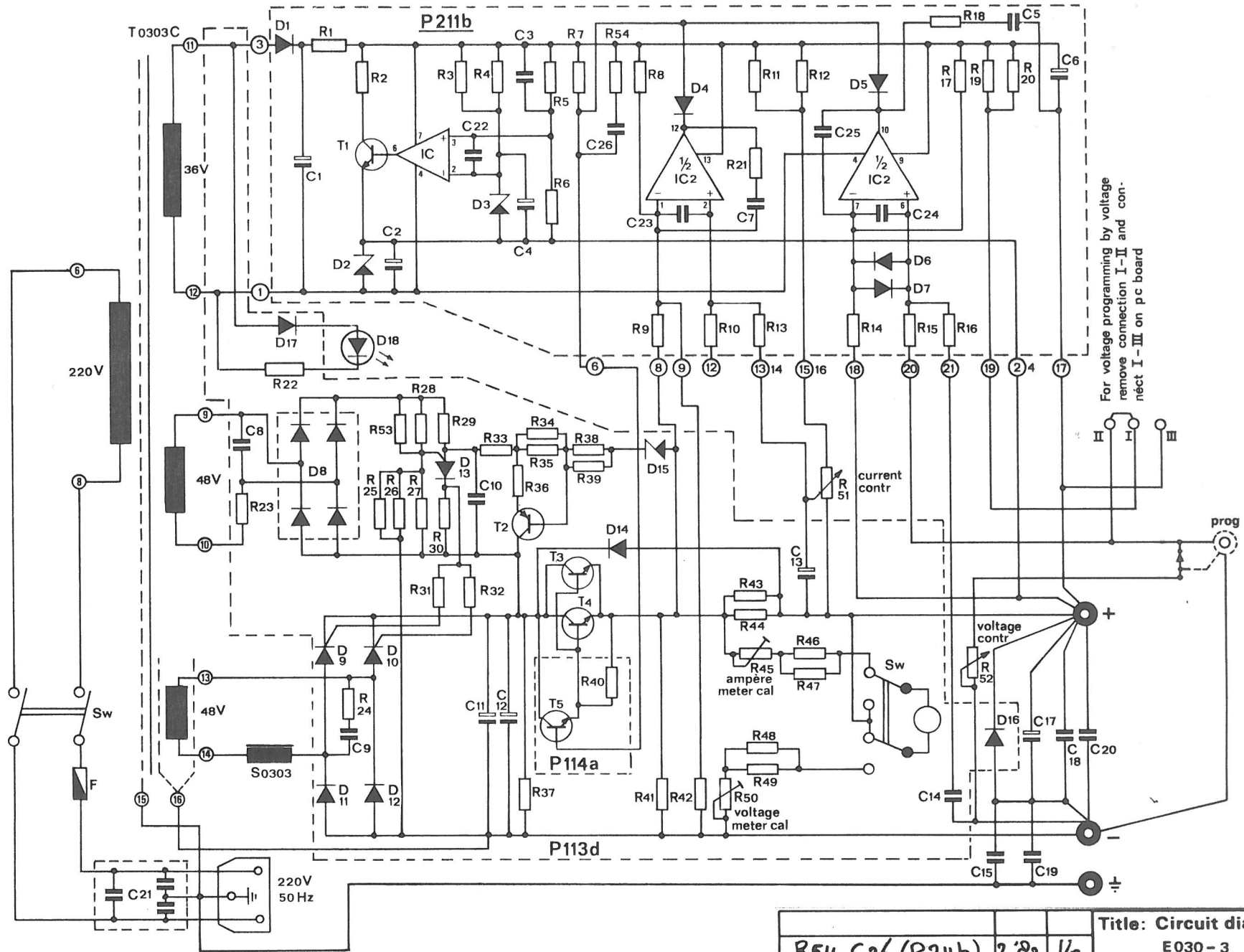
| | | | |
|---------------------|--------|------|----------------------------|
| | | | Title: Part list E030-3 |
| R54, C26 (P211b) | 2.8.82 | Ur | Date: 4-'78 |
| (Led) R22, D17, D18 | 3.8.82 | Ur | |
| Modifications | Date | App. | delta elektronika bv |





| | | | |
|---------------|------|-----|-----------------------|
| | | | Title: Wiring diagram |
| | | | E030-3 |
| | | | Date: 4-'78 |
| Modifications | Date | App | delta elektronika bv |





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) | 2.8 Ω | V _r | Date: 4-'78 |
| (Led) R22, D17, D18 | 2.8 Ω | V _r | |
| Modifications | Date | App | delta elektronika bv |

