

DELTA ELEKTRONIKA BV



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**REGULATED
POWER SUPPLIES**

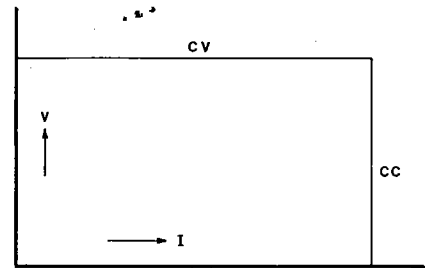
E 015-2	0- 15 V	0-2 A
E 030-1	0- 30 V	0-1 A
E 030-3	0- 30 V	0-3 A
E 060-0.6	0- 60 V	0-0.6 A
E 0300-0.1	0-300 V	0-0.1 A
E 018-0.6 D	± 0- 18 V	0.6 A

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 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.

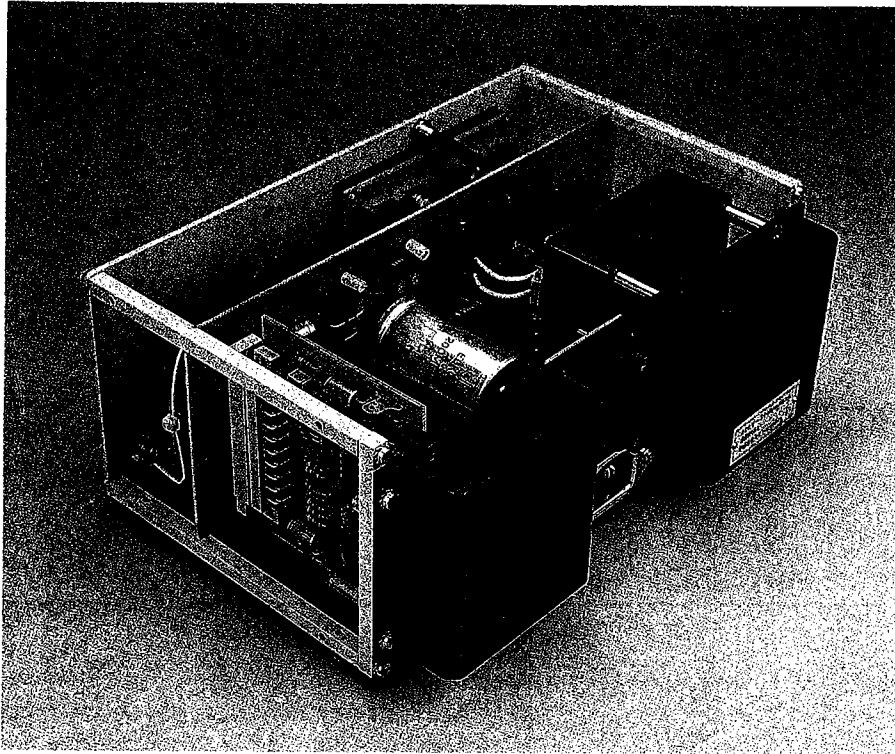
E 018-0.6 D

This model has been 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.

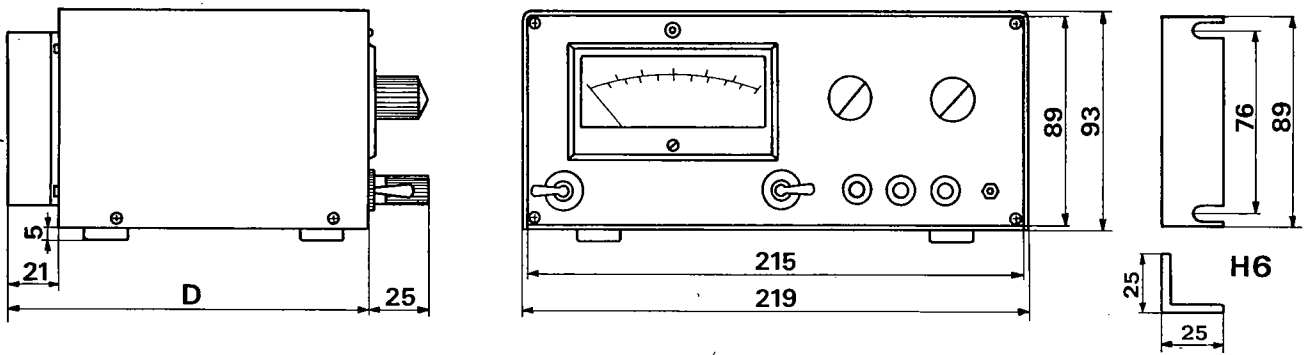
SPECIFICATIONS

Input voltage	220 V 50 Hz standard. Other input voltages at special order.
Input-output insulation	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

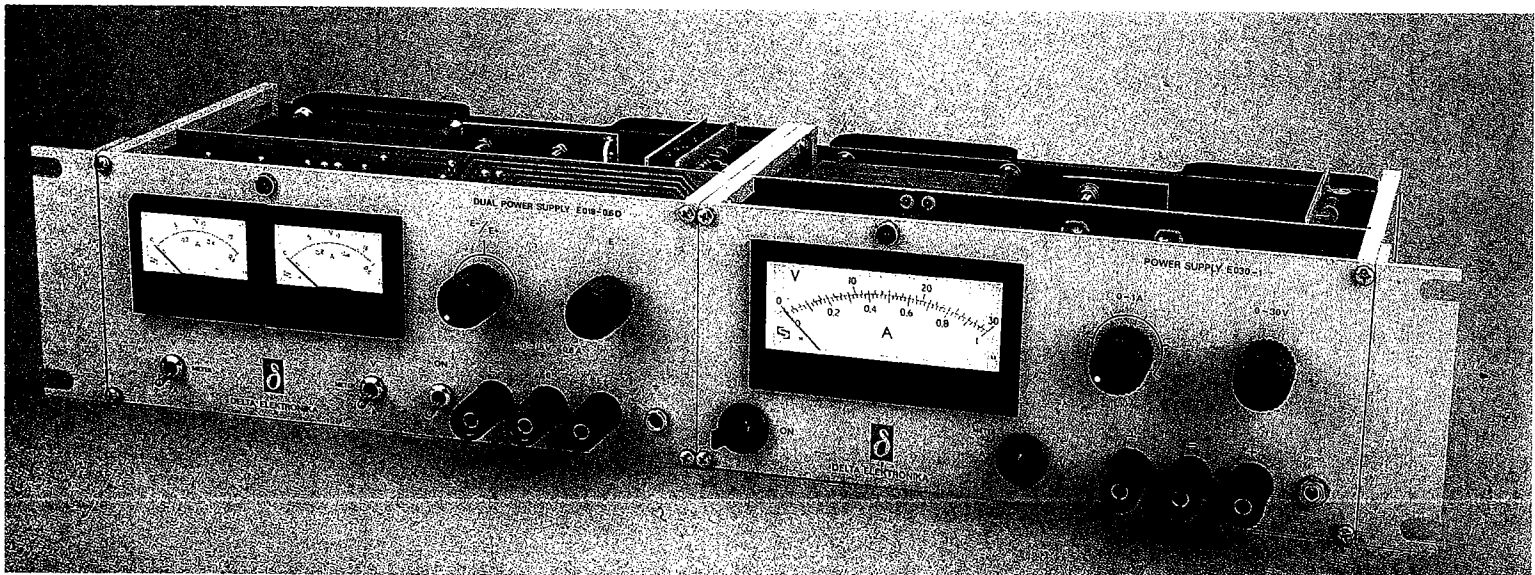
SPECIFICATIONS	E 015-2	E 030-1	E 030-3	E 060-0.6	E 0300-0.1	E 018-0.6 D
<p>CONSTANT VOLTAGE MODE</p> <p>Line regulation for 198—242 V variation</p> <p>Load regulation for 0 – 100% variation.</p> <p>Temp. coefficient per °C (% of V max)</p> <p>Drift per 8 hours under constant conditions after 15 minutes 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>1 mV</p> <p>2 mV</p> <p>0.01 %</p> <p>0.1 %</p> <p>0.1 mV</p> <p>100 mΩ</p> <p>15 μS</p> <p>0–5 kΩ</p>	<p>2 mV</p> <p>4 mV</p> <p>0.01 %</p> <p>0.1 %</p> <p>0.1 mV</p> <p>100 mΩ</p> <p>15 μS</p> <p>0–5 kΩ</p>	<p>2 mV</p> <p>4 mV</p> <p>0.01 %</p> <p>0.1 %</p> <p>0.1 mV</p> <p>100 mΩ</p> <p>15 μS</p> <p>0–5 kΩ</p>	<p>4 mV</p> <p>8 mV</p> <p>0.01 %</p> <p>0.1 %</p> <p>0.1 mV</p> <p>100 mΩ</p> <p>15 μS</p> <p>0–10 kΩ</p>	<p>10 mV</p> <p>20 mV</p> <p>0.01 %</p> <p>0.1 %</p> <p>0.5 mV</p> <p>10 Ω</p> <p>30 μS</p> <p>—</p>	<p>5 mV</p> <p>5 mV</p> <p>0.01 %</p> <p>0.1 %</p> <p>0.1 mV</p> <p>100 mΩ</p> <p>15 μS</p> <p>—</p>
<p>CONSTANT CURRENT MODE</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>	<p>0.3 mA</p> <p>2 mA</p> <p>0.05 %</p> <p>0.1 mA</p>	<p>0.3 mA</p> <p>2 mA</p> <p>0.05 %</p> <p>0.1 mA</p>	<p>0.4 mA</p> <p>4 mA</p> <p>0.05 %</p> <p>0.1 mA</p>	<p>0.3 mA</p> <p>2 mA</p> <p>0.05 %</p> <p>0.1 mA</p>	<p>0.03 mA</p> <p>0.5 mA</p> <p>0.05 %</p> <p>0.1 mA</p>	<p>—</p> <p>—</p> <p>—</p> <p>—</p>



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, with the addition of two H6 brackets they can be inserted in a 19" rack.

R = Ohm

- 1 = 680 PR 52
- 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 (270 k)
- 13 = 470
- 14 = 47
- 15 = 470
- 16 = 470
- 17 = 15 k
- 18 = CR (100)
- 19 = 1,8 k
- 20 = CR (6,8 k)
- 21 = CR (68)
- 22 = 3,9 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 PR 37
- 38 = CR (330 k)
- 39 = 270 k
- 40 = 10
- 41 = 1,5 k PR 37
- 42 = 5,6 M
- 43 = 1 7W WW 58 ER
- 44 = 1 7W WW 58 ER
- 45 = 1 k trim.
- 46 = 1,5 k
- 47 = 12 k
- 48 = 180 k
- 49 = 33 k
- 50 = 2 k trim.
- 51 = 5 k 1 trn. potm.
- 52 = 5 k 10 trn. potm.
- 53 = CR (47 k)
- 54 = -
- 55 = 2,2 M

C = microfarad

- 1 = 100 63V EB
- 2 = 22 25V EB
- 3 = 0,047 250V MKT1818
- 4 = 2,2 35V TT
- 5 = 0,01 250V MKT1818
- 6 = 22 25V EB
- 7 = 0,047 250V MKT1818
- 8 = 1 250V MKT1822
- 9 = 0,47 100V MKT1822
- 10 = 0,22 63V KC1853
- 11 = 2200 63V EYV
- 12 = 2200 63V EYV
- 13 = 10 40V EB
- 14 = 10 100V EB
- 15 = 0,1 630V MKT1813
- 16 = -
- 17 = 220 63V EG
- 18 = 0,33 250V MKT1813
- 19 = 0,01 500V GEX
- 20 = 0,01 500V GEX
- 21 = 68 nF+2x2700 pF 250V F1740
- 22 = 0,0001 500V GEB
- 23 = 0,0001 500V GEB
- 24 = 0,0001 500V GEB
- 25 = 0,01 250V MKT1818

D

- 1 = 1N4004G Philips
- 2 = ZPY 6,2 ITT
- 3 = 1N825 ITT
- 4 = 1N4148 ITT
- 5 = 1N4148 ITT
- 6 = 1N4148 ITT
- 7 = 1N4148 ITT
- 8 = KB10B250C1000 Hermann
- 9 = 2N3668 RCA
- 10 = 2N3668 RCA
- 11 = MR 751 Motorola
- 12 = MR 751 Motorola
- 13 = 2N6027 Philips
- 14 = MR 751 Motorola
- 15 = ZPD 5,1 ITT
- 16 = MR 751 Motorola
- 17 = 1N4148 ITT
- 18 = 133 BR Sloan

IC

- 1 = TL 081 IP TI
- 2 = TL 082 IP TI

F = Fuse 2 A delay 5 x 20 mm

CR = Calibration resistor

WW = Wire wound resistor

MRS 25 = metal film 0,4 W 1%

PR 37 = " " 1,6 W 5%

PR 52 = " " 2,5 W 5%

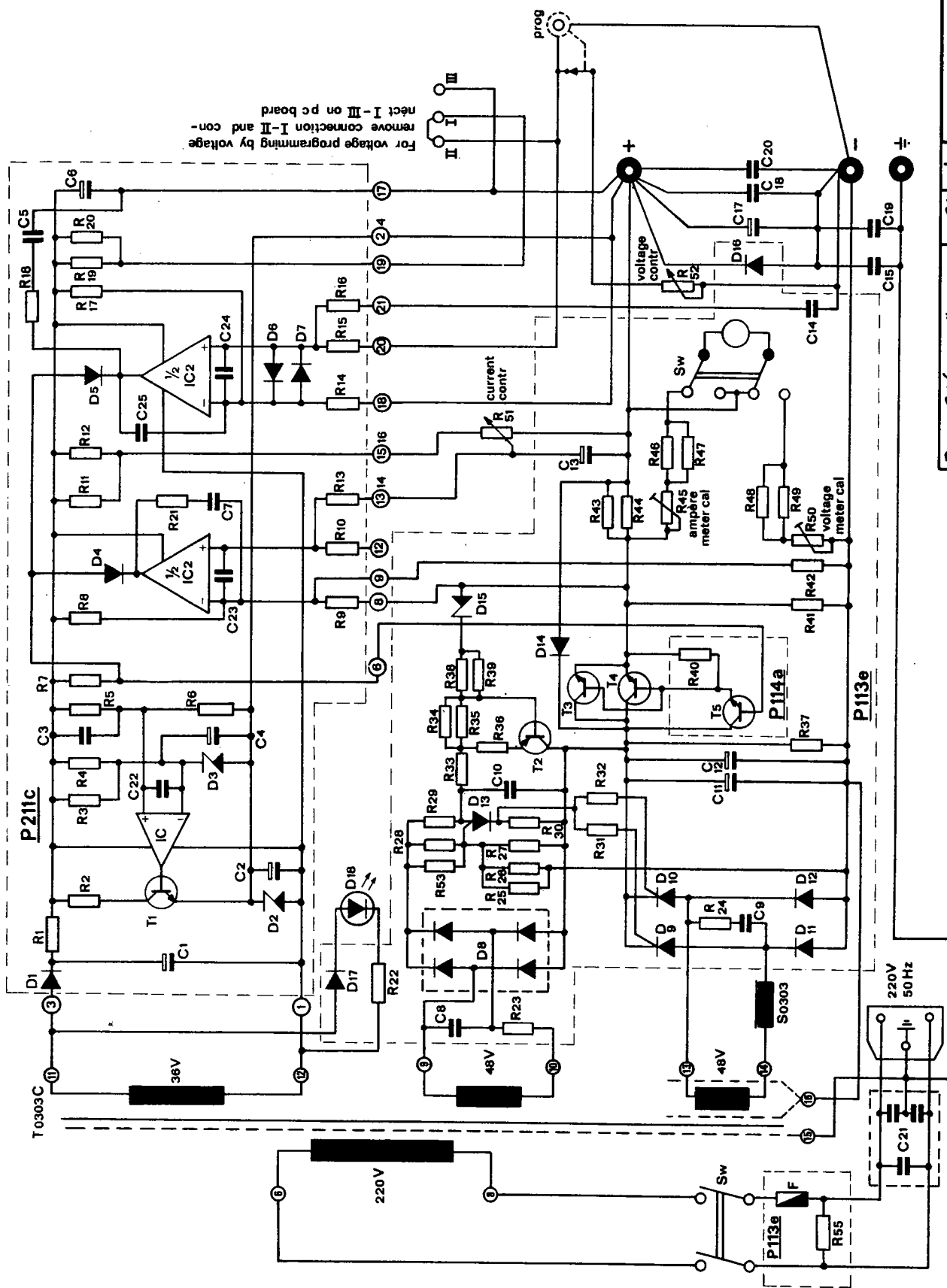
All non specified resistors are of type MRS 25

T

- 1 = BC 546 A Siemens
- 2 = BC 556 A Siemens
- 3 = 2N3055 RCA
- 4 = 2N3055 "
- 5 = BD 239 A "

R54, C26 vervallen	11-86	Vr.	Title: Part list
R55 (P113e)	8-86	Vr.	E030-3
JC1,2 (P211c)	2-86	Vr.	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

Modifications	Date	App
R54, C26 veranderd	11-86	Vr.
R55 (P113e)	8-86	Vr.
JC1,2 (P211c)	2-86	Vr.

Title: Circuit diagram
E030-3

Date: 4-78

delta elektronika bv