ØLTRONIX

OWNER'S MANUAL

REGULATED POWER SUPPLY

STABPAC 120

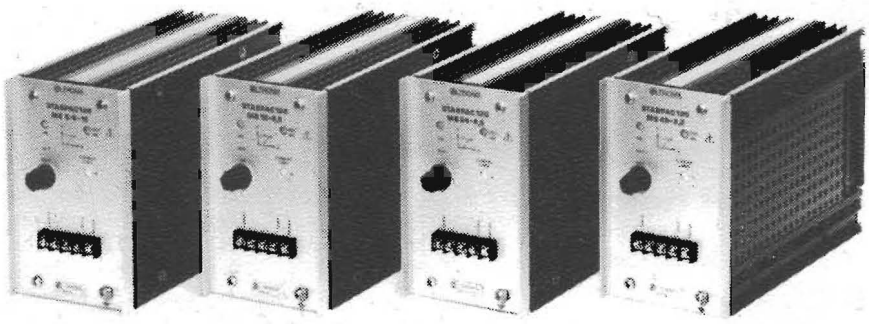
Serial No .....

USERS INSTRUCTIONAL LEAFLET

ØLTRONIX

STABPAC 120
MB 5/6 to 48

UIL-1(6)
1977-04-04



RATING DATA [1])

MODEL	VOLTAGE RANGE U_{ex} (V)	CURRENT I_{exm} (A)	REMARKS
MB 5/6 - 12	4,5 - 5,5 - 6,5	12,0	See text! (Power Regions)
MB 12 - 8,5	10,8 - 12,0 - 13,2	8,5	
MB 15 - 6,8	13,5 - 15,0 - 16,5	6,8	
MB 24 - 4,5	21,6 - 24,0 - 26,4	4,5	
MB 28 - 3,8	25,2 - 28,0 - 30,8	3,8	
MB 48 - 2,2	40,0 - 44,0 - 48,0	2,2	

Source voltage	U_S	220V±10%, 240V±10% [2]), 48-63Hz
Ambient temperature, operating	t_{amb}	0^oC to 60^oC

PERFORMANCE RATINGS [1]) (Data subject to Change)

Source current, max	I_{Sm}	$0,7A_{rms}$ to $1,0A_{rms}$, see Circuit Diagram!
Load effect, max (load regulation) I_{ex}=0-100%	U_{erL}	<5mV

Source effect (line regulation) $U_{Snom}=U_S\pm10\%$	U_{erS}	<1mV or 0,01%
Temperature coefficient $t_{amb}=0\text{-}60^oC$	α	$<0,01\%^oC^{-1}$
PARD (ripple and noise) f_B=20Hz-20MHz	U_{PARD}	$<0,5mV_{rms}$ or $2mV_{pp}$
Drift (stability) τ=8h, f_B=0-20Hz	U_{erD}	0,05%
Load transient recovery time I_{ex}=0-100% Trans. rec.band=±50mV	τ_R	<50µs
Setting range [3]	U/I	0-1,1 U_{ex}nom/0,33-1,05 I_{exm}
Remote Resistance Programming	R_{Pconst}	270Ω/V
Voltage Prog.	U_{const}	1V/V
Current Limit region at U_{ex}=min	I_{CL}	0,33 to 1,05 I_{exm}
Short Circuit current	I_{SC}	0,33 I_{exm}
Reverse current protection max	I_{Rm}	12A (model 5/6) 6A (models 12, 15, 24, 28) 3A (model 48)
Reverse voltage protection max	U_{Rm}	1V (One diode forward voltage drop)
Isolation voltage, max on output terminals relative to the chassis	U_{isol}	±500V
Insulating resistance, min (U_{test}=500V)	R_{insul}	>100MΩ
Transformer OTP, automatic	t_{OTP}	110°C
Storage temperature	t_{stor}	-40°C to 85°C
Overall dimensions	height width depth	151mm 100mm 246mm
Mass	m	5,8kg

1) Rating Data and Performance Ratings are expressed in accordance with international recommendations, notably IEC-478.

2) Connected for U_{Snom}=240V on order or changed at Service Center.

3) See Output Chart.

To make the best use of your STABPAC 120, follow these instructions!

MAINS (Figure 1)

New units are connected for 220V, 50 Hz mains supply at the factory. The mains cable shall be connected to the three flat tabs(2,8 x 0,5 mm) at the rear of the unit.
Warning: connect ground tab first and disconnect it last.
Stabpac units have no mains switch and are turned on and off generally with the principal equipment switch.
However an automatic thermal cut-out in the transformer protects the unit against excessive heat.
For 220V/240V mains voltage tap-changing, see Service Instruction STP120-1.

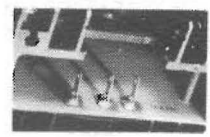


Figure 1

VOLTAGE ADJUSTMENT (Figure 2)

The output voltage can be set to any value within the nominal range by means of the "VOLT adj"-potentiometer on the front panel.

CURRENT LIMIT (Figure 2)

The maximum limiting current "a" on the fold-back curve can be adjusted downwards by the "CURRENT LIMIT a"-potentiometer on the front panel.

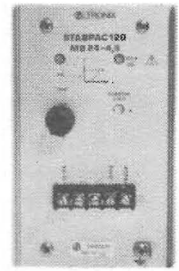


Figure 2

CURRENT RETURN FUSE (Figure 2)

There is a protective fuse in the minus-lead. If the fuse is blown it should be replaced by a new one carrying the same rating as indicated on the front panel.

POWER REGIONS (Figure 3)

The voltage range has two power regions. By changing taps on the transformer, full current can be obtained either in the lower or in the upper voltage range.

Note! The unit can be set to any value within the total specified voltage range in both cases.

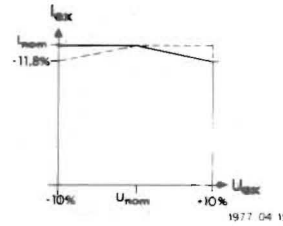


Figure 3

To change from the lower range (standard on delivery) to the upper range, remove the two upper screws on the front panel, the upper extrusion and the perforated side covers. Change over the connections on the transformer as indicated in the diagram. Replace the covers and the upper extrusion.

Figure 4

OVERVOLTAGE PROTECTION—OVP (Figure 4 and 5)

Model MB 5/6 has an overvoltage protection as standard, this feature being optional on other models.
The OVP is factory adjusted to 10% or at least 1,5V above the maximum nominal output voltage. This value can be set to within the voltage range by the "adj OVP"-potentiometer on the front panel.

For a voltage exceeding this range, connect an external power supply to the output terminal and limit its output current to 10% of the maximum current of the STABPAC 120. Set the external power supply to the desired voltage. Adjust the "adj OVP"-potentiometer to the limit where it crowbars the external supply. To add OVP on other models, remove the cover lid on the lower extrusion. Introduce a SCR (part no. H502939) in the SCR-socket with the insulator placed underneath the SCR. Tighten the SCR to the chassis with the tapping screws.

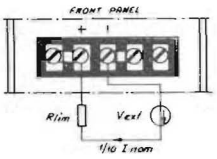


Figure 5

WARNING!

In the units without OVP-option the "adj OVP"-potentiometer has to be left in the full clockwise position.

LOAD CONNECTION (Figure 6)

The output terminals are floating with respect to the chassis and may be used at any level within ±500V.
Connect your load to the "+"-and"-"-terminals on the front panel, verify that the sense-links remain in contact with the terminals.
If desireable, compensate against conductor inductance with a capacitor across the load.

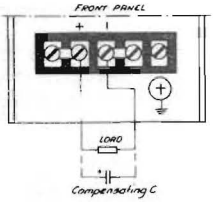


Figure 6

REMOTE SENSING (Figure 7)

Losses in load conductors can be compensated for by using remote sensing. Voltage drops of up to several volts may be accepted by the regulating circuit, but normal practise is to limit them to 0,5V on each load conductor. Remove the sense-links and connect wires from the "+SENSE"- and "-SENSE"-terminals to the load. Twist the wires with the load conductors. Compensating capacitor across the load might be useful.

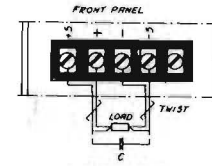


Figure 7

REMOTE PROGRAMMING (Figure 8)

With resistance control:

The unit is externally programmable. The remote resistance programming is 270Ω/V.

To maintain the specifications of the unit, the resistor programming shall conform to: ± 1%, ±50µp and >1/2 W.

Adjust the output voltage to its maximum value (the "volt-adj" potentiometer turned fully CW). Remove the "-SENSE"-link and insert the resistor programming between the "PROGR"-terminal and the "-"-terminal, or the negative side on the load when remote sensing is used. Place a 0.68µF capacitor in parallel with the resistor to prevent noise and ripple.

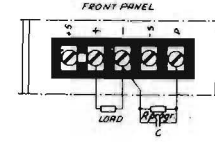


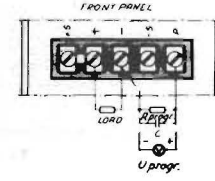
Figure 8

With voltage control:

The Stabpac unit can also be programmed with an externally connected input voltage. The out-put voltage change will maintain a one-to-one ratio with the programming input voltage.

The programming supply must have a reverse current capability of 4mA.

Adjust the output voltage to its minimum value (the "volt-adj" potentiometer turned fully CCW). Remove the "-SENSE"-link and connect the programming supply between the "PROGR"-terminal and the "-"-terminal, or the negative side on the load when remote sensing is used.



Important! The unit is programmable below the nominal range, but the output current is restricted by the foldback curve. It falls towards about 1/3 of the maximum current at zero voltage.

PARALLEL OPERATION OF UNITS

Two or more units can be used in parallel to obtain more current. Due to the "hard-to-set-equal" probability, a slight voltage step occurs as unit after unit feeds current.
By Master-Slave operation the current is fed evenly from the units (see Service Instruction STP120-2).

SERIES OPERATION OF UNITS (Figure 9)

Two or more units may be used in series, up to a maximum sum which depends on the isolation limitation to the chassis of 500V. If any part of the load-line falls outside the combined rating curves let the voltage level to be established before the units are loaded.

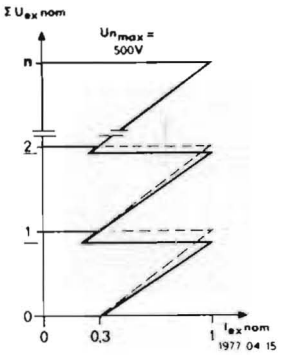


Figure 9

COMBINATION OF OPERATIONAL MODES

Any form of combination of operational modes is possible, provided each individual istruction is followed.

MOUNTING (Figure 10)

This unit is designed to be mounted in the upright position, in all cases of normal convection cooling. The unit is provided with fixed M4-nuts on the sides and slots for either M4- or B8-tapping screws. When the slots are used, the screws shall penetrate the slots to at least 12mm for secure fixing. The unit can also be mounted in the STABRAC C, a crate specially designed to house STABPAC-units.

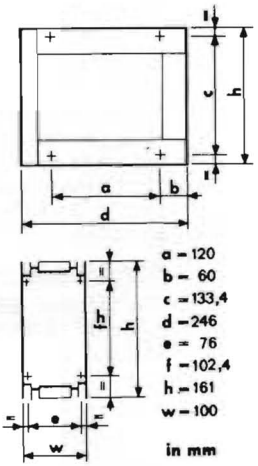
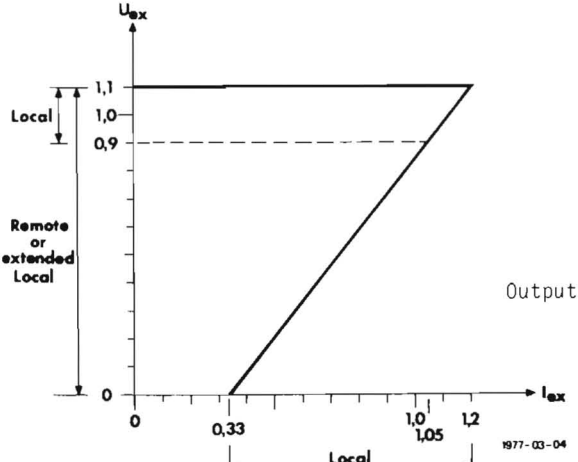
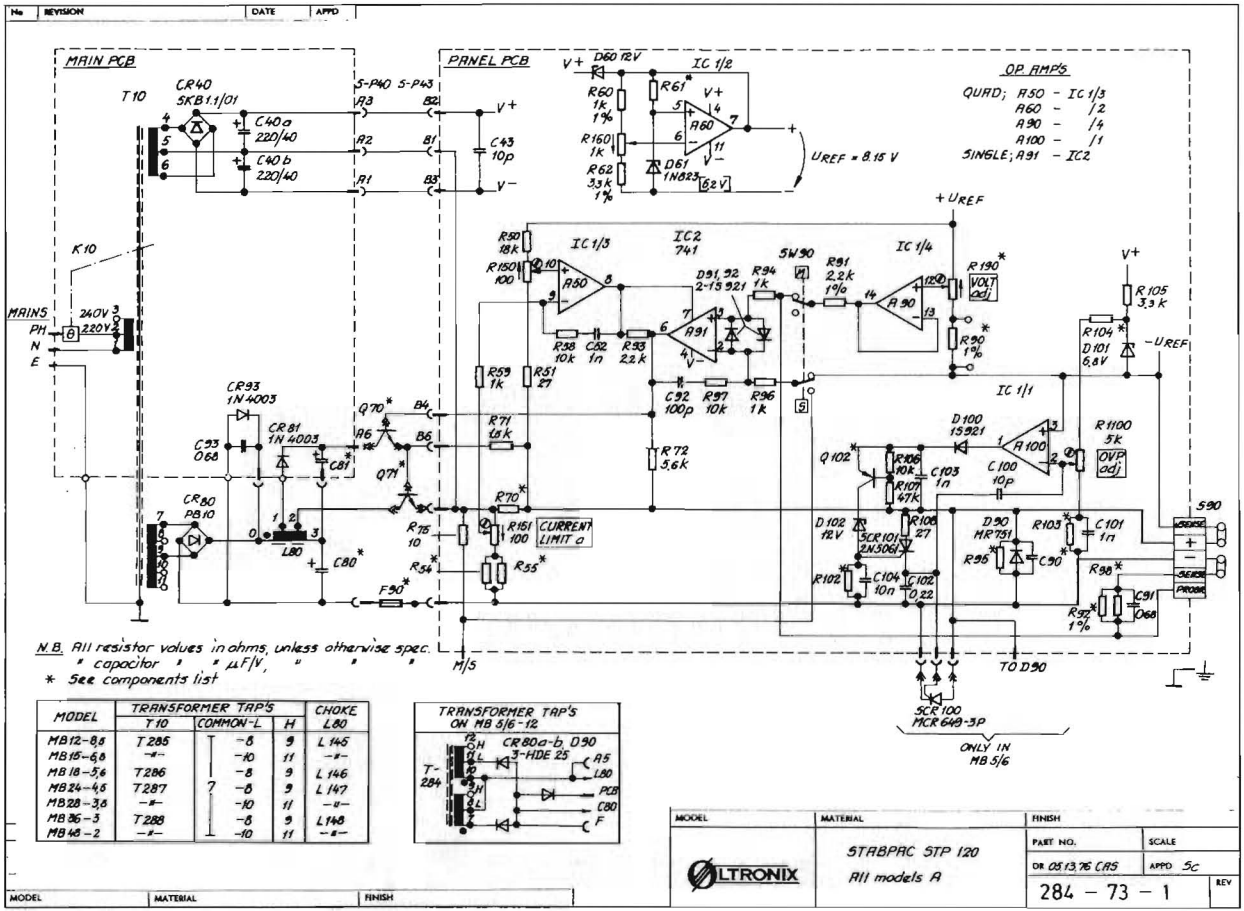


Figure 10



Output Chart



MODEL	TRANSFORMER TAP'S T10	COMMON-L	H	CHOKE L80
MB12-8,8	T285	-8	9	L145
MB15-6,8	-"-	-10	11	-"-
MB18-5,6	T286	-8	9	L146
MB24-4,5	T287	-8	9	L147
MB28-3,6	-"-	-10	11	-"-
MB36-3	T288	-8	9	L148
MB48-2	-"-	-10	11	-"-

MODEL	MATERIAL	FINISH

OLTRONIX

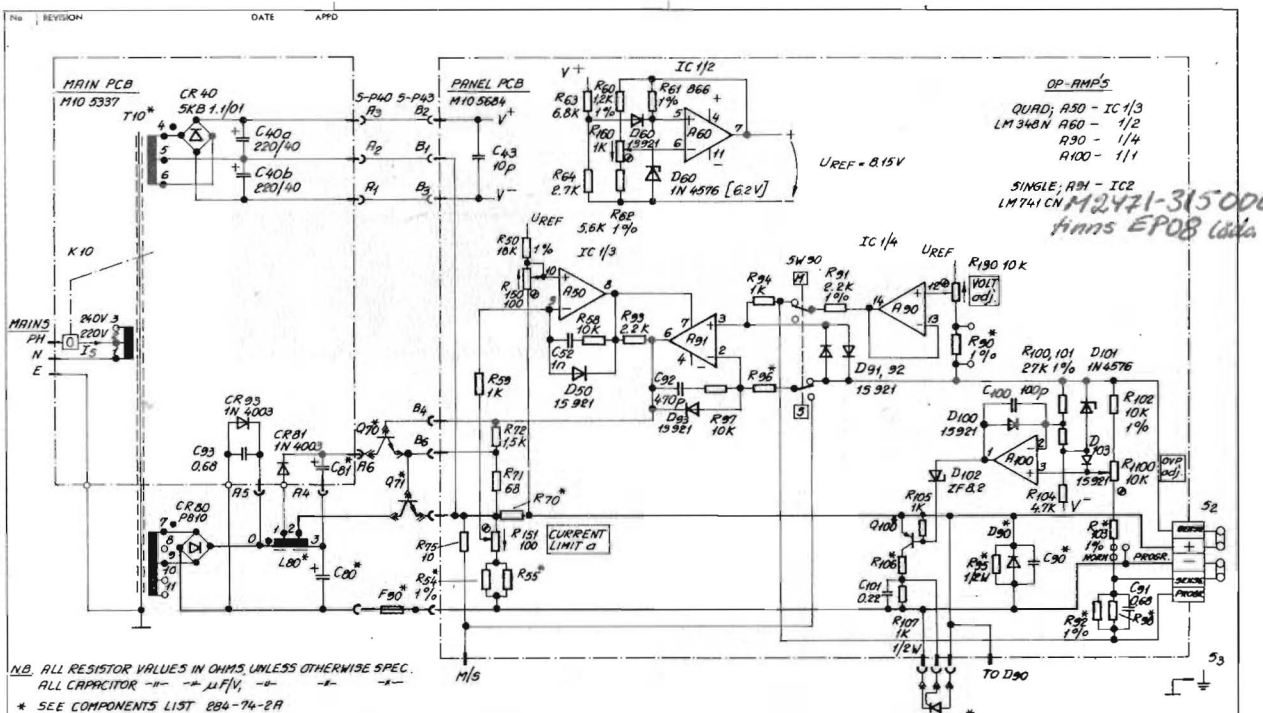
STABPAC STP 120
All models A

PART NO.	SCALE
DR 05.13.76 CAS	APPD 5c
284 - 73 - 1	REV

COMP. \ MODEL	MB5/6-12	MB12-8,5	MB15-6,8	MB24-4,5
C80	2-22mF/16V	2-10mF/40V	idem	2-4,7mF/63V
C81	4.7mF/16V	2,2mF/16V	idem	470µF/25V
C90	2-470µF/16V	2-220µF/40V	idem	2-100µF/63V
CR80	2-HDE25-2	PB10	idem	idem
F90	12,5A, fast	10A, fast	8A, fast	5A, fast
L80	L144	L145	idem	L147
Q70	2N6290	idem	idem	2N6292
Q71	2N3771	idem	idem	2N6254
Q102	BC178B	idem	idem	2N5401
R54	5,6k	22k	idem	27k
R55	82k	22k	47k	-
R70	10m	14m	idem	26,5m
R90	18k 1%	20k 1%	idem	idem
R92	1,8k 1%	3,9k 1%	5,6k 1%	8,2k 1%
R95	1k	3,3k	idem	4,7k
R98	-	47k	68k	56k
R102	270	820	idem	1,5k
R103	8,2k	15k	idem	22k
R104	6,8k	idem	idem	5,6k
R190	10k	5k	10k	5k
R1100	5k	idem	idem	idem
T10	T284	T285	idem	T287
SCR100	MCR649-3P	(MCR649-3P)	idem	idem
D90	HDE25-2	MR751	idem	idem

Valid for units with PCB no M10 5336.

PART NO --	SCALE --	ØLTRONIX	NAME COMPONENTS LIST
MTRL NO --			FAMILY STP120 MODEL all A-vers.
SURF. TREAT. --		[X] AB [ ] BV [ ] AG [ ] GmbH	DRWG NO 284 — 74 — 1A
DRAWN DATE 1977-03-14 SIGN	FREEZE DATE 1977-03-14 SIGN		



MODEL	TRANSFORMER TAP'S		CHOKE L 80	Is (A)	TRANSFORMER TAP'S ON MB 5/6-12
		COMMON-L(N)			
MB 5/6-12	T 284	SEE FIGURE	L 144	0.8	
MB 12-8.5	T 285	-8 (9)	L 145	10.5	
MB 15-6.8	-"-	-10 (11)	-"-	-"-	
MB 24-4.5	T 287	-8 (9)	L 147	-"-	
MB 28-3.8	-"-	-10 (11)	-"-	-"-	
MB 36-3	T 288	-8 (9)	L 148	-"-	
MB 48-2	-"-	-10 (11)	-"-	-"-	

C 80a-b D90 3-HDE 25-5 A5 L80 PCB D90 C80

MODEL	MATERIAL	FINISH
	STABPAC 120	PART NO.
	All models version B	DR. 76.12.06 SC/BB
		284 - 73 - 2

SCALE
APPD 76.12.23.SC
REV

M12471-315000
finns EP08 lda 9

COMP. \ MODEL	MB5/6-12	MB12-8,5	MB15-6,8	MB24-4,5	MB28-3,8	MB48-2,2
C80	2-22mF/16V	2-10mF/40V	idem	2-4,7mF/63V	idem	2-3,3mF/100V
C81	4,7mF/16V	2,2mF/16V	idem	470µF/25V	idem	220µF/40V
C90	2-470µF/16V	2-220µF/63V	[1]	2-100µF/63V	idem	220µF/100V
CR80	2-HDE25-2	PB10	idem	idem	idem	idem
D90	HDE25-2	MR751	idem	idem	idem	MR501
F90	12,5A, fast	10A, fast	8A, fast	5A, fast	idem	2,5A, fast
L80	L144	L145	idem	L147	idem	L148
Q70	2N6290	idem	idem	2N6292	idem	idem
Q71	2N3771	idem	idem	2N6254	idem	2N3055/90
Q100	BC178B	idem	idem	2N5401	idem	idem
R54	5,36k 1%	13k 1%	16,2k 1%	25,5k 1%	30,1k 1%	51,1k 1%
R55	-	-	-	-	-	-
R70	11m	16m	20m	30m	35m	61m
R90	13,7k 1%	21,5k 1%	22,1k 1%	21,5k 1%	idem	23,2k 1%
R92	1,87k 1%	3,83k 1%	4,75k 1%	7,68k 1%	8,87k 1%	15k 1%
R95	120 1/2W	680 1/2W	820 1/2W	4,7k 1/2W	5,6k 1/2W	10k 1/2W
R98	-	-	-	-	-	-
R103	5,62k 1%	43,2k 1%	idem	100k 1%	idem	205k 1%
R106	100	270	idem	560	idem	1,2k
SCR100	MCR649-3P	(MCR649-3P)	idem	idem	idem	idem
T10	T284	T285	idem	T287	idem	T288

[1]) 470µF/40V
220µF/40V

Valid for units with PCB no M10 5684.

PART NO -- / SCALE --	ØLTRONIX	NAME	COMPONENTS LIST
MTRL NO --		FAMILY	STP120
SURF. TREAT. --	[X] AB [ ] BV [ ] AG [ ] GmbH	MODEL	all B-vers.
DRAWN DATE 1977-04-04 SIGN / FREEZE DATE 1977-04-04 SIGN		DRWG NO	284 — 74 — 2A

MASTER-SLAVE OPERATION

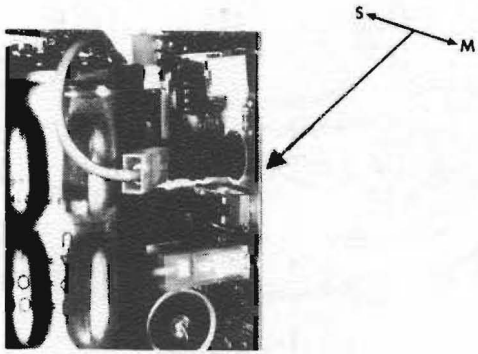
a) Connect the M/S-output terminal on the Master-unit to the "PROGR"-terminal on the Slave-unit(s).
The M/S-terminal is a flat-tab on the panel-PCB, accessible behind the lid on the lower profile.

b) Switch the M/S-switch to the S-position on the Slave-unit(s).
The switch is situated at half-height on the panel-PCB, and it is accessible through the left perforated side-cover.
The S-position is towards the inner of the unit.

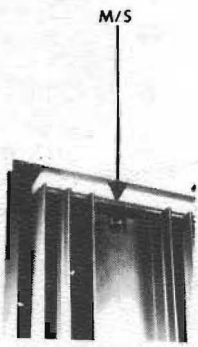
c) Remove the "-SENSE"-link on the Slave-unit(s).

d) Connect parallelwise the "+"-and "-"-terminals to the load.
Use conductors of equal length.

e) The "VOLT adj"-potentiometer on the Master-unit will control all of the outputs.



b)



a)

MAINS VOLTAGE TAP-CHANGING

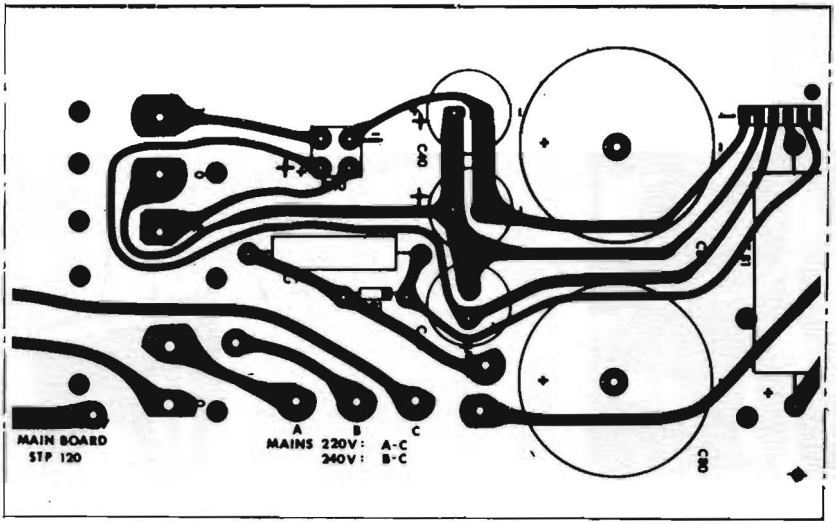
a) Disconnect the power supply from the mains.

b) Remove the two upper screws on the front panel and the two fixing screws for the upper extrusion.

c) Remove the side covers.

d) Move the soldered wire to the new position as indicated in the figure below.

e) Assemble the power supply and change on the sticker at the rear the voltage to the new value.



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