

**GARANZIA TOTALE COMPRESO MATERIALI E
MANO D'OPERA MESI 6 TRASPORTI ESCLUSI**

*COMPLETE WARRANTY INCLUDED MATERIALS AND
LABOUR MONTHS 6 TRASPORT NOT INCLUDED*

DATA/DATE

SERIAL N.№

HANTAREX
ELECTRONIC SYSTEMS

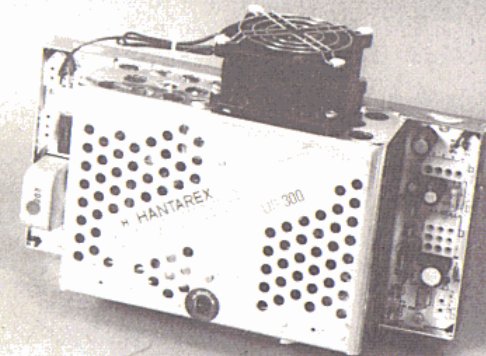
VIDEO GAMES DIVISION

50127 FIRENZE - ITALY Via dei Perfetti Ricasoli, 78

Tel. 055 / **49731** (20 linee)

Fax 055 / 268486 - Tlx 572341 Hantar-I

cod. 53874590

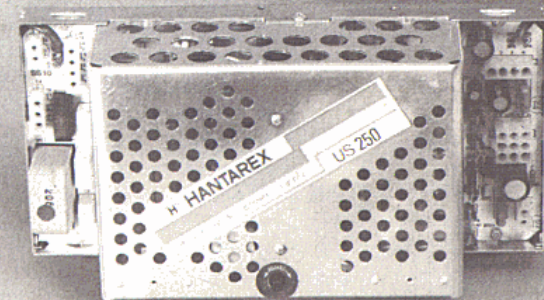


HANTAREX
ELECTRONIC SYSTEMS

US 250

*universal
switched-mode
power supply*

US 300



US 250/10A

US 300/15A

VENTILATO
VENTILATED

**alimentatore a commutazione
per basse e alte tensioni**
**universal switched-mode
power supply**

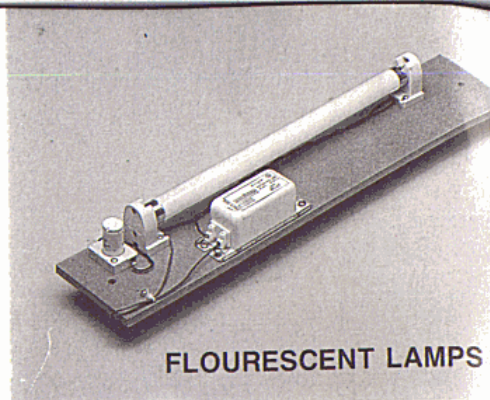
La prerogativa più importante di questi alimentatori è la possibilità di **alimentare totalmente e direttamente una macchina per Video-Games** senza alcun tipo di trasformatore (né tradizionale a lamierini, né toroidale, o nucleo C + C). Gli alimentatori sono in grado di alimentare contemporaneamente:

- il monitor a colori,
- la piastra logica,
- la lampada neon,
- le eventuali lampadine delle plancia
- le lampadine delle gettoniera.

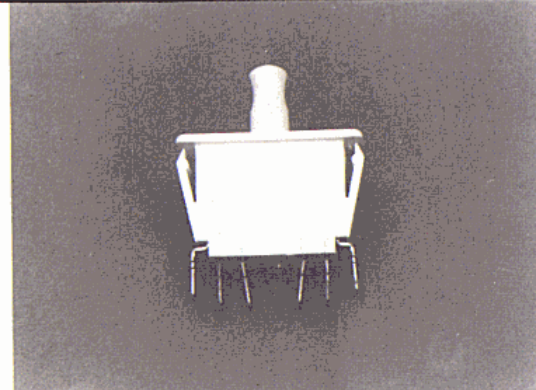
*The most important feature is the ability to **provide a Video Games machine totally and directly** without a laminated core or toroidally wound mains transformer.*

They simultaneously provide the following supplies:

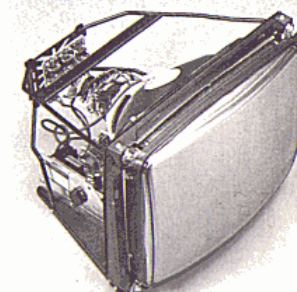
- the colour monitor,
- the logic board,
- all the illumination lamps comprising the fluorescent lamp behind the silk-screened panel, controls panel and the coin mechanism door.



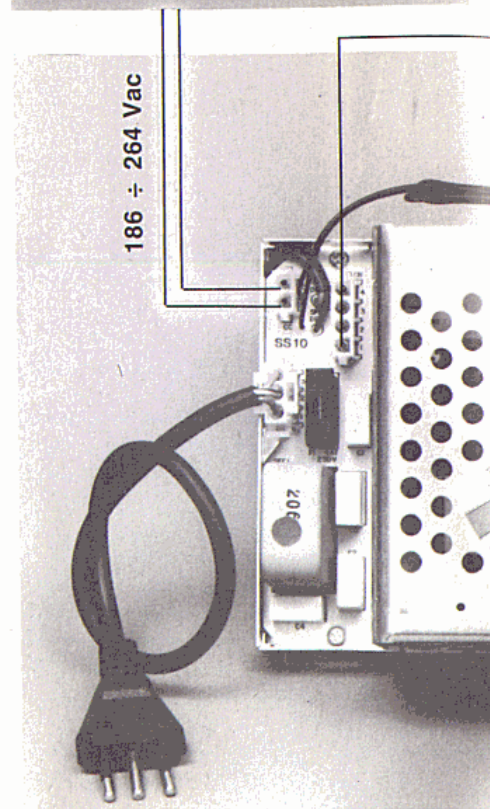
FLOURESCENT LAMPS



MAINS INTERLOCK SWITCH

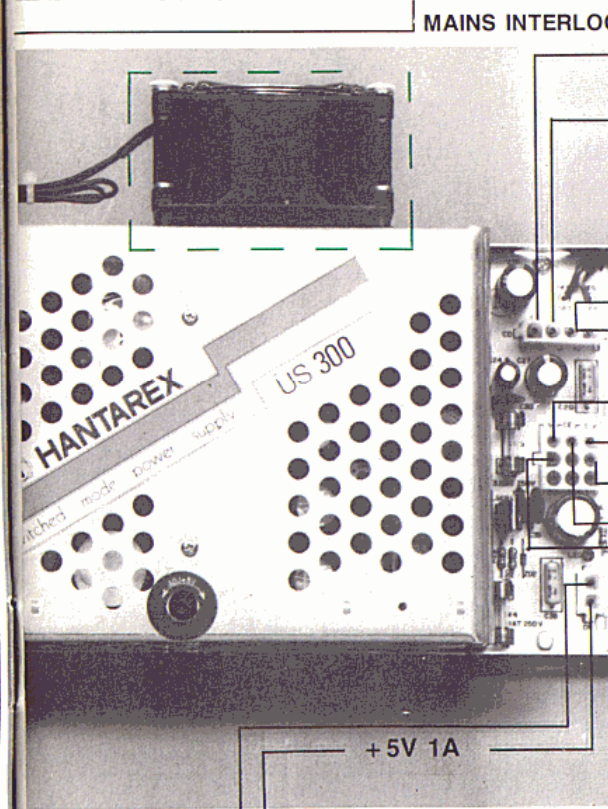


COLOUR MONITOR



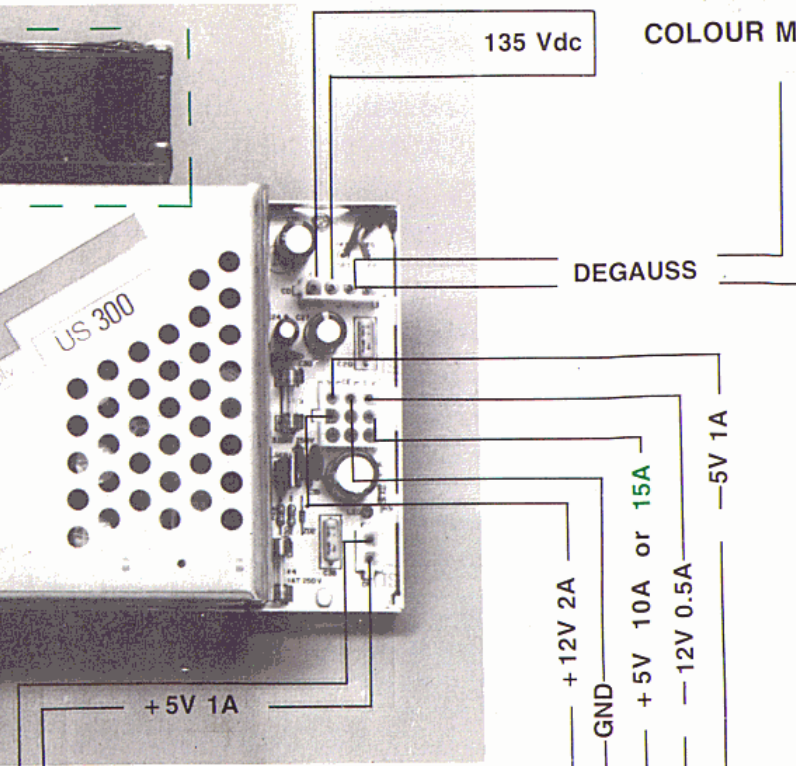
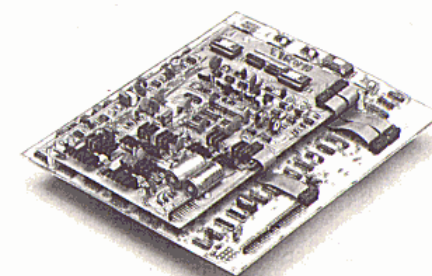
186 ÷ 264 Vac

MAINS 186 ÷ 264 Vac



COIN MECHANISM LAMPS

LOGIC BOARD



CARATTERISTICHE TECNICHE TECHNICAL CHARACTERISTICS

US 250

CARATTERISTICHE D'INGRESSO / INPUT CHARACTERISTICS	
tensione di rete / Vac voltage	186 ÷ 264 Vac
frequenza / frequency	50 ÷ 60 Hz
Corrente di spunto / switch-on inrush current	< 30 A PEAK

CARATTERISTICHE DI USCITA / OUTPUT CHARACTERISTICS	
alimentazione monitor monitor supply	135 ± 10% Vdc 0.6 A max protezione elettronicamente dal cortocircuito electronically protected from short-circuit
alimentazione logica logic circuit supply	5 ± 2% Vdc - 3A min. - 10A max aggiustabile tra 4.5 e 5.5 V adjustable between 4.5 and 5.5 V protezione elettronicamente da sovraccarico e cortocircuito electronically protected from short-circuit
	12 ± 6% Vdc da 0.2 a 2A protezione da fusibile protected by fuse
	— 12 ± 6% Vdc da 0.2 a 0.5A protezione elettronicamente protected from overload
	— 5 ± 6% Vdc da 0 a 1A protezione elettronicamente protected from overload

NOTA - la tensione di uscita del 5 Vdc non può superare, anche in caso di guasto, 6 Vdc grazie alla presenza di un circuito tipo CROW-BAR.
NOTE - the 5 Vdc output can never exceed 6 Vdc in the event of breakdown as it is protected by a CROW-BAR circuit.

USCITE AUSILIARI / AUXILIARY OUTPUT	
lampade sportello / door lamps	+ 5% Vdc 1A Max protezione da fusibile / protected by fuse
degaussing monitor / degaussing monitor	186 ÷ 264 Vac protezione da fusibile / protected by fuse
neon / neon lamps	186 ÷ 264 Vac protezione da fusibile / protected by fuse
ONDULAZIONE RESIDUA SU USCITE BASSA TENSIONE AI MAX CARICHI RESIDUAL A.C. VOLTAGE ON LOW VOLTAGE OUTPUTS AT MAXIMUM LOADS	< 20 mVpp
ONDULAZIONE RESIDUA SU USCITA ALIMENTAZIONE MONITOR RESIDUAL A.C. VOLTAGES ON MONITOR FEED OUTPUT	< 200 mVpp

TEMPO DI MANTENIMENTO DELLE TENSIONI DI USCITA AL CADERE DELLA RETE TIME OUTPUT VOLTAGE ARE MAINTAINED AFTER REMOVAL OF MAINS INPUT VOLTAGE	> 20 ms
ISOLAMENTO (fra rete e uscite) INSULATION (mains input to D.C. outputs)	1500 Vac (classe 1 - IEC65)
TEMPERATURA AMBIENTE DI LAVORO AMBIENT WORKING TEMPERATURE	— 5°C + 50°C alimentatore montato verticalmente power supply mounted vertically
TEMPERATURA DI IMMAGAZZINAMENTO AMBIENT STORAGE TEMPERATURE	— 20°C to + 85°C
PESO NETTO/NET WEIGHT	Kg. 1.750

US 300

CARATTERISTICHE D'INGRESSO / INPUT CHARACTERISTICS	
tensione di rete / Vac voltage	186 ÷ 264 Vac
frequenza / frequency	50 ÷ 60 Hz
Corrente di spunto / switch-on inrush current	< 30 A PEAK

CARATTERISTICHE DI USCITA / OUTPUT CHARACTERISTICS	
alimentazione monitor monitor supply	135 ± 10% Vdc 0.6 A max protezione elettronicamente dal cortocircuito electronically protected from short-circuit
alimentazione logica logic circuit supply	5 ± 2% Vdc - 3A min. - 15A max aggiustabile tra 4.5 e 5.5 V adjustable between 4.5 and 5.5 V protezione elettronicamente da sovraccarico e cortocircuito electronically protected from short-circuit
	12 ± 6% Vdc da 0.2 a 2A protezione da fusibile protected by fuse
	— 12 ± 6% Vdc da 0.2 a 0.5A protezione elettronicamente protected from overload
	— 5 ± 6% Vdc da 0 a 1A protezione elettronicamente protected from overload

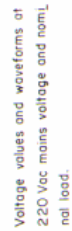
NOTA - la tensione di uscita del 5 Vdc non può superare, anche in caso di guasto, 6 Vdc grazie alla presenza di un circuito tipo CROW-BAR.

NOTE - the 5 Vdc output can never exceed 6 Vdc in the event of breakdown as it is protected by a CROW-BAR circuit.

USCITE AUSILIARI / AUXILIARY OUTPUT	
lampade sportello / door lamps	+ 5% Vdc 1A Max protezione da fusibile / protected by fuse
degaussing monitor / degaussing monitor	186 ÷ 264 Vac protezione da fusibile / protected by fuse
neon / neon lamps	186 ÷ 264 Vac protezione da fusibile / protected by fuse
ventilatore / fan	186 ÷ 264 Vac protezione da fusibile / protected by fuse

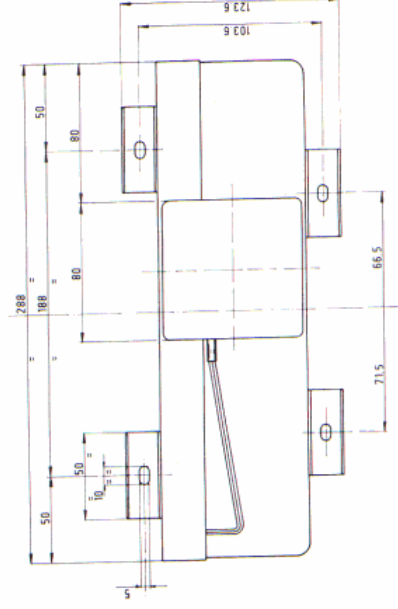
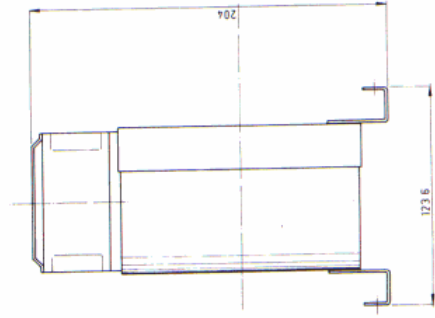
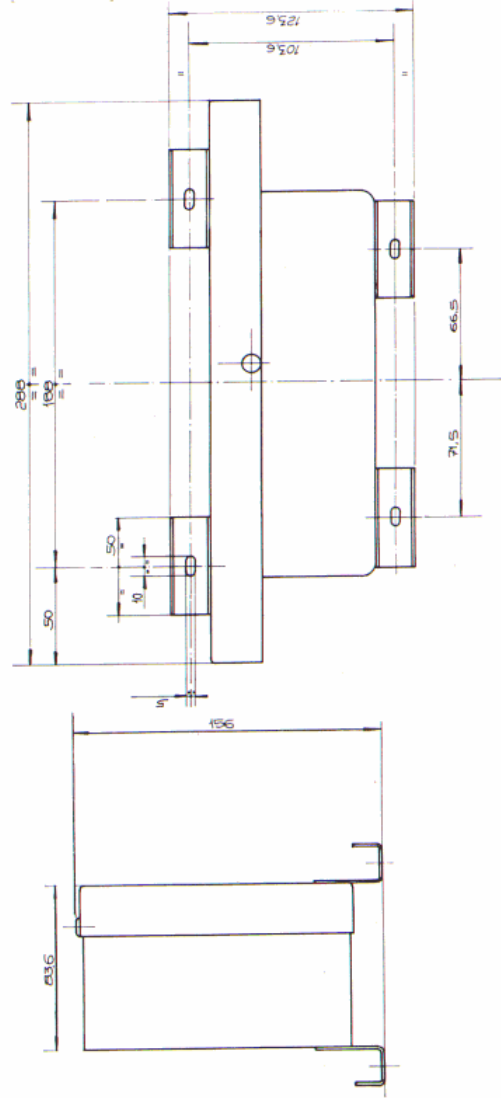
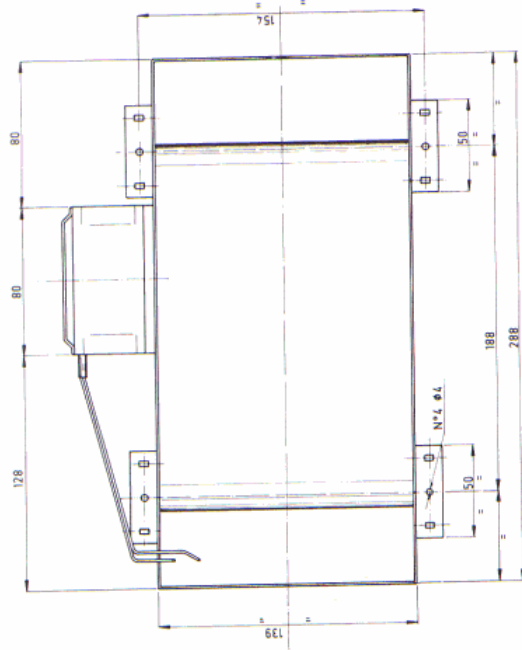
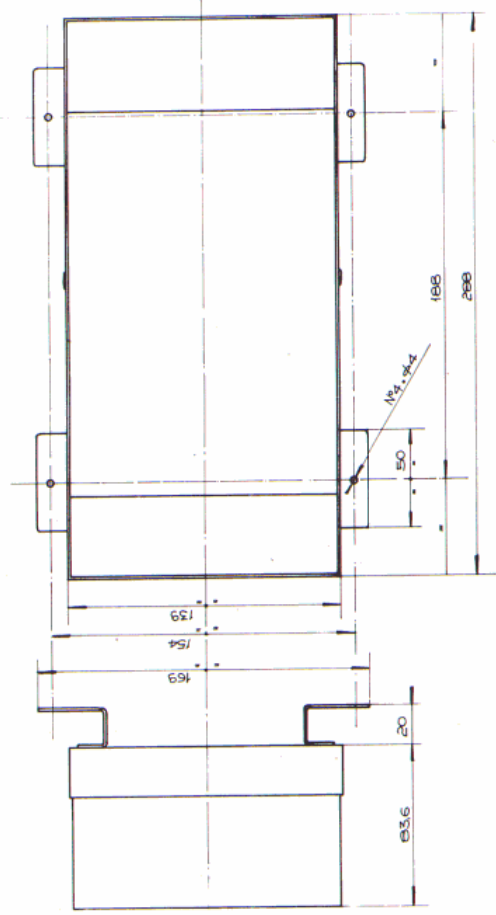
ONDULAZIONE RESIDUA SU USCITE BASSA TENSIONE AI MAX CARICHI RESIDUAL A.C. VOLTAGE ON LOW VOLTAGE OUTPUTS AT MAXIMUM LOADS	< 20 mVpp
ONDULAZIONE RESIDUA SU USCITA ALIMENTAZIONE MONITOR RESIDUAL A.C. VOLTAGES ON MONITOR FEED OUTPUT	< 200 mVpp

TEMPO DI MANTENIMENTO DELLE TENSIONI DI USCITA AL CADERE DELLA RETE TIME OUTPUT VOLTAGE ARE MAINTAINED AFTER REMOVAL OF MAINS INPUT VOLTAGE	> 20 ms
ISOLAMENTO (fra rete e uscite) INSULATION (mains input to D.C. outputs)	1500 Vac (classe 1 - IEC65)
TEMPERATURA AMBIENTE DI LAVORO AMBIENT WORKING TEMPERATURE	— 5°C + 50°C alimentatore montato verticalmente power supply mounted vertically
TEMPERATURA DI IMMAGAZZINAMENTO AMBIENT STORAGE TEMPERATURE	— 20°C to + 85°C
PESO NETTO/NET WEIGHT	Kg. 2.100



US 250

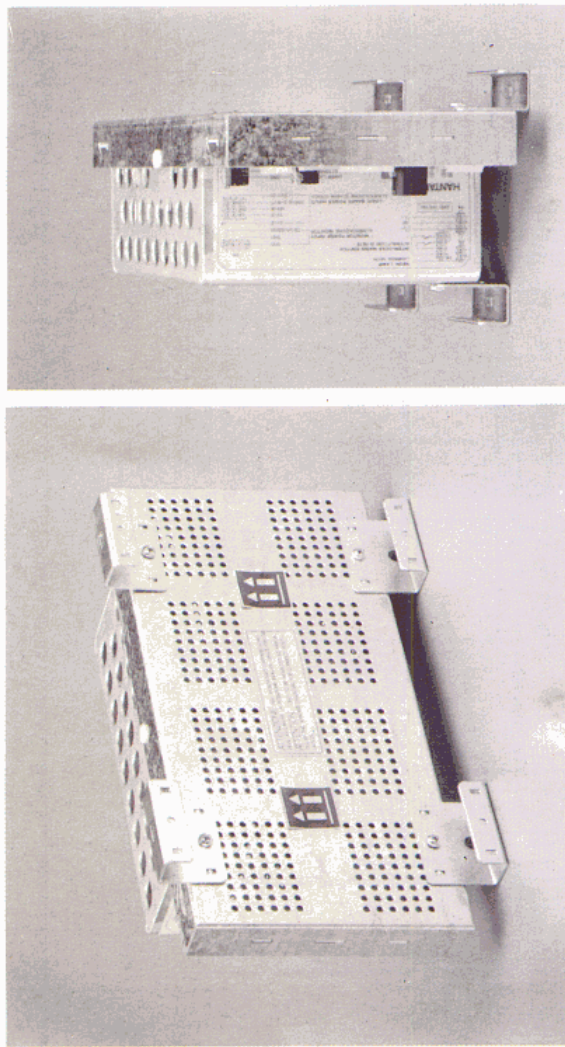
US 300



MONTAGGIO PIEDINI E CONSIGLI PER L'INSTALLAZIONE FIXING MOUNTING BRACKETS AND INSTALLATION INSTRUCTIONS

Estrema facilità di montaggio/smontaggio con due posizioni realizzabili tramite opportuni piedini, facenti funzione di staffe o guide, forniti con l'alimentatore stesso.

Extreme ease of mounting and unmounting with two-position feet, serving the dual purpose of bracket and guide. These are provided with each power unit.

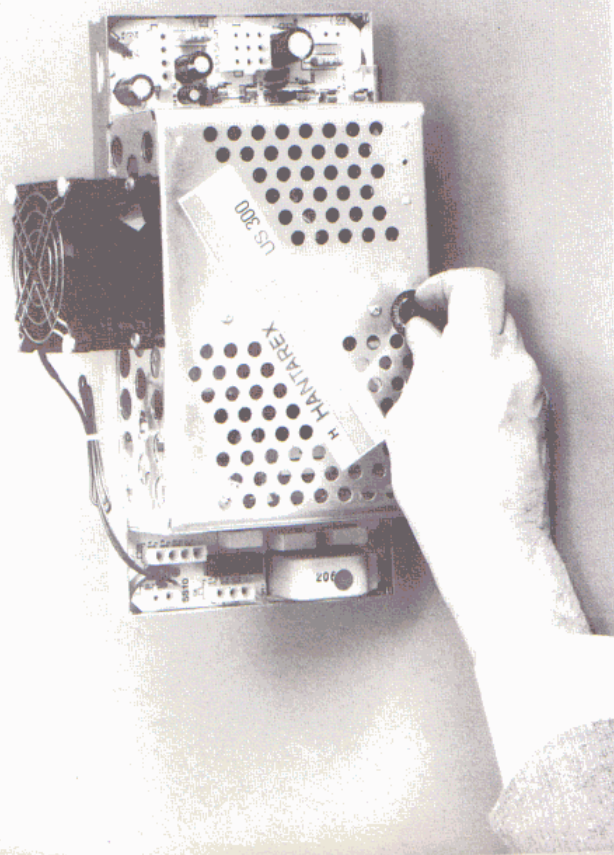
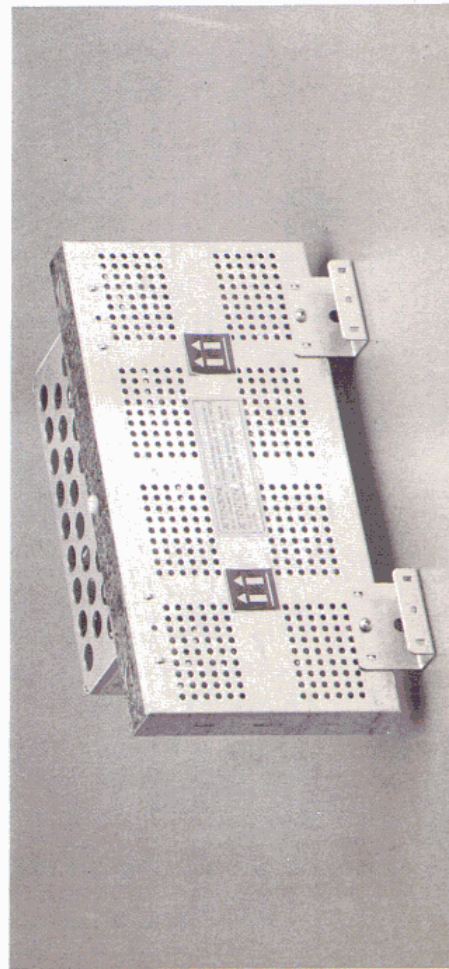


IMPORTANTE

Montare l'alimentatore verticalmente come indicato dalle frecce, per una corretta ventilazione (vedi foto).

IMPORTANT

For a good ventilation, assemble the power supply vertically as in the photo.



Per aggiustare la tensione di uscita fra 4.5 e 5.5 V, agire sul trimmer dall'esterno, come indicato nella fotografia.

The output voltage can be set between + 4.5 and + 5.5 V by means of RV2.

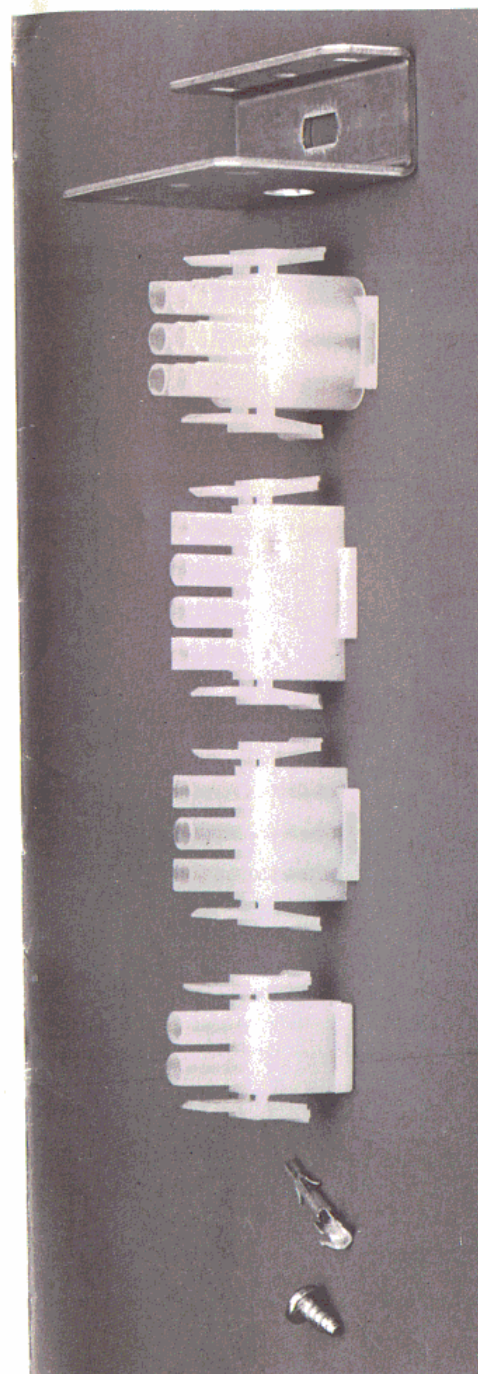
PARTS LIST

US 250 / US 300

CODE	DESCRIPTION	REF. N°	QTY.
20100000	DIODE 1N 4148 B	D 22-23	2
20100010	DIODE BA 159	D 6-14	2
20110060	ZENER DIODE 1/2 W ZPD 5.1 V	ZD 2	1
20140010	OPTOCOUPLER CNX 62	IC 2	1
20150004	DIODE 1N 4004	D 8-16-19	3
20150007	DIODE 1N 4007	D 5	1
20150130	DIODE BY 255	D 1-2-3-4	4
20150170	DIODE BYV 95/C	D 13	1
20150220	DIODE BYW 80-100	D 20	1
20150230	DIODE BYW 95/C - 600	D 10-11-12	3
20150410	DIODE BYV 96/E	D 7	1
20150430	DIODE BYV 27/150	D 9-17-18	3
20150290	DIODE RGP 30K	D 15-DX	2
20150530	SCHOTTKY DIODE MBR 3045	D 21	1
20180003	RED LED DIODE 3 mm	—	1
20410500	TRANSISTOR TIP 120	TR 2	1
20430030	TRANSISTOR BUS 48 P	TR 3	1
20440030	THYRISTOR TYP 212	SCR 1	1
20620071	INTEGRATED CIRCUIT μ A 7905	IC 4	1
20620065	INTEGRATED CIRCUIT μ A 7912	IC 5	1
20620400	INTEGRATED CIRCUIT TEA 1039	IC 1	1

20620610	INTEGRATED CIRCUIT LM 311	1
20620620	INTEGRATED CIRCUIT TL 431 CLP	1
21000000	WIREWOUND RESISTOR 0,01 E	1
21221000	RESISTOR 1/4 W 5% 10 E	1
21221500	RESISTOR 1/4 W 5% 15 E	1
21223300	RESISTOR 1/4 W 5% 33 E	1
21230000	RESISTOR 1/4 W 5% 100 E	1
21231801	RESISTOR 1/4 W 1% 180 E	1
21222202	RESISTOR 1/4 W 1% 220 E	2
21233300	RESISTOR 1/4 W 5% 330 E	1
21235600	RESISTOR 1/4 W 5% 560 E	1
21241002	RESISTOR 1/4 W 1% 1 K	2
21247501	RESISTOR 1/4 W 2% 7,5 K	1
21248200	RESISTOR 1/4 W 5% 8,2 K	1
21251200	RESISTOR 1/4 W 5% 12 K	1
21271001	RESISTOR 1/4 W 1% 1 M	1
21231200	RESISTOR 1/2 W 5% 12 E	1
21382201	RESISTOR 1/2 W 5% 22 M 232224213226	1
21402200	RESISTOR 1 W 10% 0,22 E VTM 200-0	2
21521000	RESISTOR 10 E 10% 2 W	1
21751500	METAL OXIDE RESISTOR A W 15 K	1
22121501	VERTICAL WIREWOUND RESISTOR 5 W 10% 15 E	1
22131000	VERTICAL WIREWOUND RESISTOR 5 W 100% 15 E	1
22441000	VERTICAL WIREWOUND RESISTOR 1 K 9 W 10%	1
22446800	VERTICAL WIREWOUND RESISTOR 6,8 K 9 W 10%	1
22451000	VERTICAL WIREWOUND RESISTOR 10 K 9 W 10%	1
22511500	VERTICAL WIREWOUND RESISTOR 1,5 E 11 W 10%	1
23031001	HORIZONTAL TRIMMER PT 10 V 100 E	2
23034703	VERTICAL TRIMMER PT 10 H 470 E	1
24341002	ELECTROLYTIC CAPACITOR EN 12.35 1000 uF 16 V-40 + 105°C	1
24342200	ELECTROLYTIC CAPACITOR EN 12.35 2200 uF 16 V	1
24424700	ELECTROLYTIC CAPACITOR EN 12.35 47 uF 25 V	1
24431000	ELECTROLYTIC CAPACITOR EN 12.35 100 uF 25 V	3
24434700	ELECTROLYTIC CAPACITOR EN 12.35 470 uF 25 V	2
24532210	ELECTROLYTIC CAPACITOR EN 12.35 220 uF 35 V-40 + 105°C	1
24541002	ELECTROLYTIC CAPACITOR EN 12.35 1000 uF 35 V-40 + 105°C	1
24541001	ELECTROLYTIC CAPACITOR EN 12.35 1000 uF 40 V D 18 H 35	1
24921000	ELECTROLYTIC CAPACITOR EN 12.35 10 uF 250 V	1
24924705	ELECTROLYTIC CAPACITOR EN 12.35 47 uF 250 V-40 + 105°C	1
24534710	ELECTROLYTIC CAPACITOR EN 12.35 470 uF 35 V-40 + 105°C	1
24933303	ELECTROLYTIC CAPACITOR DIN 41238 330 uF 385 V	1
25271000	POLYESTER CAPACITOR 1 uF 100 V 1.60 P 15	2
25461010	POLYESTER CAPACITOR 100 NF 10% 250 V 1.60 P 10	1
25661010	POLYESTER CAPACITOR 100 NF 10% 630 V 1.60 P 22,5	1
25661500	POLYESTER CAPACITOR 150 NF 10% 630 V 1.60 P 22,5	1
25743303	POLYESTER CAPACITOR 3,3 NF 5% 1000 V 1.60 P 10	1
25744702	POLYPROPYLENE CAPACITOR 4700 PF 20% 250 VCA 1,72 Y	2
25744707	POLYPROPYLENE CAPACITOR 100 PF 20% 250 VCA 1,73 Y P 15	2
25761002	POLYPROPYLENE CAPACITOR 100 NF 20% 250 VCA 1,58 P 15	2
25941001	POLYPROPYLENE CAPACITOR 1 NF 10% 2000 V 1,73 P 15	1
25942200	POLYPROPYLENE CAPACITOR 2,2 NF 5% 1750 V 1,73 P 15	1
26447600	CERAMIC CAPACITOR 4700 PF - 20 + 80 50 V	6
28020100	TOROID (FERRITE B 30)	1
28020300	CHOKE 450 uH	1
28020505	SWITCH TRANSFORMER 1503 FERR. E 55	1
28020600	MAINS FILTER 2x25 mH 1.6 A	1
28020610	CHOKE 50 uH 2 A	1
28021250	CHOKE 15 uH 15A	1
28020685	CHOKE 1 uH	1
29100000	SLOW-BLOING-FUSE 2 A	1
29100001	SLOW-BLOING-FUSE 1 A	1
29100004	SLOW-BLOING-FUSE 4 A	1
29100009	SLOW-BLOING-FUSE 3,15 A	1
29100080	FUSE CLIP	6
29100150	FUSE CARRIER STEAB	1
34074610	BURNDY CONNECTOR UHR 950 T 9 WAYS	1
34074620	BURNDY CONNECTOR UHR 450 T 4 WAYS	2
34074630	BURNDY CONNECTOR UHR 350 T 3 WAYS	1
34074640	BURNDY CONNECTOR UHR 250 T 2 WAYS	2
50420185	MICA INSULATOR X TO 220 500 V	4
50421130	MICA INSULATOR SOT 93 A 2000 V	1
50420188	MICA INSULATOR SOT 93 A 500 V	1
21231201	RESISTOR 1/4 W 1% 120E	1
21231001	RESISTOR 1/4 W 1% 100E	1
21241000	RESISTOR 1/4 W 5% 1 K	2
24342202	EL. CAP. 2200 NF 16 V SXA 105°C	2
34075030	NUVAL CONNECTOR 2 WAYS	1
29030610	FAN (US 300 ONLY)	1
50423360	SPACER 1809 FOR FAN (US 300 ONLY)	4
IC 6		1
IC 3		1
R 25 - R 34		1
R 8		1
R 29		1
R 30		1
R 11		1
R 17		1
R 19-24		2
R 31		1
R 32		1
R 26-27		2
R 15		1
R 5		1
R 16		1
R 28		1
R 14		1
R 21		1
R 12-13		2
R 6		1
R 7		1
R 23		1
R 22		1
R 9		1
R 2		1
R 20		1
R 1		1
RV 1-2		2
RV 3		1
C 22		1
C 36		1
C 39		1
C 17-24-34		3
C 27-29		2
C 11		1
C 25		1
C 28		1
C 19		1
C 18		1
C 15		1
C 5		1
C 20-38		2
C 16		1
C 7		1
C 8		1
C 13		1
C 6-21		2
C 2-3		2
C 1-4		2
C 9		1
C 10		1
C 23-26-30-33-35-37		6
B 1		1
B 3		1
TH 1		1
SFE 1		1
B 4		1
B 6		1
B 2		1
F 2		1
F 4		1
F 1		1
F 3		1
—		6
—		1
CE		1
CB-CD		2
CA		1
CC-CF		2
—		4
—		1
—		1
—		1
R 18		1
R 35		1
R 33		1
C 31-32		2
CG		1
—		1
—		4

ACCESSORI ACCESSORIES



n° 4 Piedino supporto
Mounting bracket
(cod. Hantarex 50114410)

n° 1 Conn. Burndy UHP 901T or
Conn. Amp. Universal Mate-N-Lok -
cod. 1-480706
(cod. Hantarex 34074650)

n° 2 Conn. Burndy UHP 401T or
Conn. Amp. Universal Mate-N-Lok -
cod. 1-480702
(cod. Hantarex 34074660)

n° 1 Conn. Burndy UHP 301T or
Conn. Amp. Universal Mate-N-Lok -
cod. 1-480700
(cod. Hantarex 34074670)

n° 2 Conn. Burndy UHP 201T or
Conn. Amp. Universal Mate-N-Lok -
cod. 1-480698
(cod. Hantarex 34074680)

n° 25 Cont. Split Pin - Burndy UHM 2201G
or Cont. Split Pin - Amp.
cod. 350705-1
(cod. Hantarex 34074690)

n° 4 Vite per piedino supporto
Mounting bracket screws
B 3,9 x 6,5 UNI 659-71 ZN
(cod. Hantarex 40035066)